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THE RUSSIAN MODALS

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

IN

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled The Russian Modals submitted by Robert E. Radke in partial fulfilment of the requirements for the degree Master of Arts in Slavic Linguistics.

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ABSTRACT

The so-called 'modals' in Russian, which include the words nado, nužno, možno, nel'zja, dolžen, moč' and smoč', appear to have much in common, and might reasonably be considered a semantic class of words. Yet they are highly diverse morphologically. They do, however, show certain characteristic syntactic properties, and so we might reasonably expect to find that at some deeper level of abstraction they are a syntactic category as well.

First, the evidence both for and against the existence of a syntactic category "MODAL" is examined, and the conclusion is drawn that there is probably no need for a grammar of Russian to contain such a syntactic category. There remain a number of factors which link sub-groups of modals to each other, and to other groups of words as well. Some of these groupings might be explained by introducing several semantic features into the lexical entries for the modals. It is proposed to relate the "personal" (dolžen, moč', smoč') and "impersonal" (nado, nužno, možno, nel'zja) uses of the modals to each other and to other personal and impersonal sentences through the semantic feature [CAUSALITY], which is shown to be present in the "personal" modals and absent in the "impersonal" ones. Furthermore, "strong" modalities (necessity, obligation) and "weak" modalities (possibility, permissibility) can be linked through the feature [STRONG] as a means of explaining the behavior of modals in their interaction with the aspect of their infinitival complements in negated sentences.

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CHAPTER 1: INTRODUCTION

In this study we will examine aspects of the semantic and syntactic behavior of the set of Russian words known as modals. The set is represented by the words nado, nužno, možno, nel'zja, dolžen, moč' and smoč' for the purposes of this investigation. We will examine evidence both for and against the hypothesis that these words constitute a syntactic class. We will show that regardless of whether these modals constitute a syntactic class, they can be shown to be interrelated through a matrix of (semantico-)syntactic features, and that these proposed features, which would constitute part of the lexical specifications of these words, account for certain aspects of the semantic behavior of modals which would otherwise be difficult to explain. This study assumes the so-called Extended Standard Theory of transformational-generative grammar of Chomsky (1965; 1970 (a); 1970 (b)) though work of other linguists on the modals within other theories of language will be examined.

1.1 The Data

Modality in Russian has been examined by a number of linguists. However, agreement has not been reached on even as fundamental a matter as the scope of the term "modality". For some linguists, modality is restricted to sentences which contain some assessment of the possible or necessary truth or falsehood of an utterance. This is especially true of such early Russian linguists as Davydov (1854) and Vostokov (1843). They were greatly influenced

by the scope of the term "modality" as it is used in logic. For others, modality includes any subjective judgment made by the speaker of an utterance. Such a "psychological" approach was adopted by Šaxmatov (1941). Not surprisingly, the literature on modality in Russian tends to be chaotic as a result. Until linguists agree on the object of study it is likely to remain so.

The words chosen as the basis for this study reflect the influence of the work of linguists studying English and German structures. These languages have well-defined surface-structure systems of modal auxiliaries: e. g. English can, may, must; German müssen, können, dürfen.

Russian linguists have tended to treat modality in terms of modal particles and parenthetic words, tying the words to be examined here to traditional categories which they resemble morphologically. For example, nado and nužno would be classed as adverbs, while moč' and smoč' would be classed as verbs. Less traditional approaches have created new categories such as the so-called "category of state", to which some of these modal words are assigned.

One property which links these words to the English and German modal auxiliaries is their use with infinitival complements to which they serve, at least in traditional terms, an auxiliary function.[1]

However, the choice of these words can be motivated in yet

1. In English the 'to' of the infinitive is dropped, but the verb remains otherwise in infinitive form. Likewise in German, the verb is clearly in infinitive form, as are the complements of pouvoir and devoir in French.

another way. If we adopt the viewpoint that modality is expressed by words which carry a meaning of subjective judgment on the part of the speaker, and examine the frequency of occurrence of words in Russian, we find that the most frequently-used words carrying such meaning are in fact moč', nado, možno, dolžen, nužno and nel'zja:[2]

WORD	FREQUENCY RANK
moč'	39
nado	82
možno	105
dolžen	134
nužno	192
nel'zja	292
nužnyj	302
umet'	397
prixodit'sja	456
smoč'	571
vozmožnost'	614
objazatel'no	784
sudno	803
naverno	817

Apart from the fact that these are the most frequently-used words with recognizably "modal" meanings in Russian, as we go further down the list we begin to encounter words which appear to

2. Štejnfel'dt (1963).

be genetically related to the more frequently-used ones: e. g. nužnyj, smoč'. Other words appearing lower down on the list are synonyms or near-synonyms of some of the commoner words on the list: e. g. prixodit'sja, objazatel'no. Although all five of the commonest modal words can be negated, nel'zja, as the negation of možno, is included, because it is a suppletive form. On the other hand, smoč' is added to the list of words covered in this study because of its close syntactic, morphological and genetic connections with moč'. But nužnyj is excluded because it fails to co-occur with infinitival complements, a general characteristic of all the other words.

Had linguists studying Russian modality agreed on the scope of the term, there would still remain the controversy over whether it should be regarded as a grammatical or as a lexical category. By "grammatical category", traditional linguists meant a category identifiable on the basis of structural criteria. "Lexical category" referred to a category owing its existence to common features of meaning. The essential differences between these approaches were illustrated above through the two methods of identifying the Russian modals as a group for the purposes of this study. These problems will be addressed more rigorously from a modern perspective below in Chapters 3 and 4 respectively.

The lexical and grammatical approaches do not necessarily lead to the same results. The linguist has been confounded along the way by the many synonymy or quasi-synonymy relations which exist between various expressions with modal meanings. This has tempted

some linguists to examine modality across the boundaries of traditional syntactic and lexical categories. For example, Vinogradov (1947)[3] and Isačenko (1965)[4] link the verbal category of mood to modality.[5]

The general lack of agreement which has arisen through trying to account for the intuitive feeling that modal expressions whose forms differ are synonymous, is likely not to be resolved within a theory of grammar which cannot explain synonymy relations. In Chomsky (1957) it is shown that non-generative, and in particular non-transformational grammars, are incapable of explaining such relationships. Therefore the controversies surrounding the Russian modals are unlikely to be resolved outside a generative-transformational framework.

1.2 The Theory

The so-called Extended Standard Theory of transformational-generative grammar (Chomsky (1965; 1970 (a); 1970 (b)) postulates the separation of semantic considerations from the generation of sentences, though in practice the separation is not always strictly adhered to. It also calls for the exclusion of derivational morphology from the transformational component of the grammar.

The grammar, constructed in a manner patterned after an axiomatic system in mathematics or formal logic, consists of a

3. Vinogradov (1947: 582, 587-590, 598-601, 603-606).
4. Isačenko (1965: 470-471).
5. A more detailed outline of some of these approaches to modality follows in Chapter 2.

syntactic component, a phonological component and rules of semantic interpretation.

The syntactic component is regarded as central to the grammar. It consists of a base component, analogous to the rules of formation of an axiomatic system, and a transformational component, which amounts to a set of operations on the base. The base component includes phrase structure rules (PS Rules) of the type:

$$S \longrightarrow NP \quad VP$$

and a lexicon in which phonological, syntactic and semantic features are specified for each lexical formant. Strings of formants and their associated features constitute what is known as the deep structure (DS) of the sentence (S).

Transformation rules (T-Rules) do not alter the meaning of an utterance.[6] They operate on deep structures giving rise to surface structures (SS) for which the phonological component of the grammar can supply a vocalization.

Semantic interpretation is, to date, the least-studied area of the Extended Standard Theory. Chomsky (1970 (b)) notes that, while in some instances surface structure information may figure in semantic interpretation, deep structure plays the central role.

It follows from the invariant meaning constraint on trans-

6. Though essentially true, under strictly defined circumstances, T-Rules do alter meanings, as, for example, when logical predicates cross in the transformation PASSIVE. The Extended Standard Theory proposes that in these instances, the semantic interpretive component takes as input the structure created by PASSIVE to account for the altered meaning.

formations, that all information necessary for semantic interpretation must be present in, or derivable from the deep structure, except in certain well-defined cases.

1.3 The Hypothesis

This study seeks to answer two questions. First of all, it examines what syntactic grounds there are for postulating the existence of a syntactic category MODAL in a grammar of Russian. This question is taken up in Chapter 3 below. Second, it looks at some of the semantic properties of the modals and attempts to arrive at a feature specification of part of their lexical entries which partially explains some of these properties. This is the subject of Chapter 4 below.

Soviet linguists have given scant attention to the Chomsky model(s) of transformational-generative grammar, and relatively little work has been done in this framework using Russian data outside the Soviet Union. However, a number of studies of modal auxiliaries have been done using English data, some of which may shed some light on out tasks. This work, and a small amount of work on the Russian modals will be reviewed in Chapter 2 below and referred to in the remaining chapters.

The results presented in the following chapters are far from being a complete statement on the Russian modals. Much is left unanswered or unsaid. Chapter 5 below will review some of the deficiencies of this treatment and point to several areas where further research might prove useful.

CHAPTER 2: SELECTED LITERATURE ON MODALITY

There are several areas of research which have contributed to our present understanding of modality in Russian. These include research on the so-called "category of state", on the verbal category of mood, and on modal words and particles. Historically these have been separate areas of investigation, but there are numerous points where the various paths have crossed. This chapter contains a brief review of how some linguists have approached these areas. This will be followed by a survey of some recent research on modals in English and Russian in a transformational-generative framework, and a glance at three interesting treatments of the semantics of the modals.

2.1 The Category of State in Russian

The so-called "category of state" in Russian includes words which only function as predicates (skazuemye). They resemble adverbs and/or short-form adjectives in form. There is no universally accepted definition of the category of state, nor is there full agreement as to which words are admissible to the category. In fact, it is debated whether there is justification for postulating the existence of such a category at all.

There seems to be general agreement among those linguists who are proponents of the category of state that it includes the words možno, nel'zja, nado and nužno. Therefore, the debate on the category of state touches on modality in Russian.

The verbal character of predicative words was recognized long ago by Buslaev (1858),[1] A. X. Vostokov (1843)[2] and still earlier by Fonvizin![3] Credit for this insight is generally given to Vostokov.

The actual postulation of a category of state among the word categories of Russian grammar is first found in Ščerba (1928). Noting that words such as nel'zja, možno, and nado do not bear the usual relation of adverbs to verbs, adjectives or other adverbs, and recognizing that words such as xolodno and veselo also exhibit this property, Scerba stated:

> "Možet byt' my imeem delo zdes' s osoboj kategoriej sostojanija (v vyšeprivedennyx primerax nikomu i ničemu ne pripisyvaemogo -- bezličnaja forma) v otličie ot takogo že sostojanija, no predstavljaemogo kak dejstvie: nel'zja (v odnom iz značenij)/ pozvoljaetsja; stanovitsja xolodno/xolodaet... Formal'nym priznakom étoj kategorii byli by neizmenjaemost' s odnoj storony, i upotreblenie so svjazkoj, s drugoj...."[4]

Further on he introduces personal constructions with words such as (ja) gotov, rad, dolžen, sposoben, nameren, and so on, as well as expressions of the type byt' navesele, byt' v sostojanii, byt' zamužem, where byt' is used as a copula in Ščerba's opinion.

1. Although Galkina-Fedoruk (1952: 394) mentions Barsov in this connection, she gives no reference.
2. Vostokov, A. X. (1843: 94).
3. Fonvizin (1770 - 80 gg.) "Vseobščaja pridvornaja grammatika" Cited in Isačenko (1965: 279).
4. Ščerba (1928: 16) However, Chvany (1970 (a): 362) cautions us against interpreting this to mean that Ščerba was postulating a new part of speech. She says that he was merely postulating something akin to Chomsky's syntactic features. If Chvany is correct, then Ščerba appears to have been misinterpreted by a number of scholars.

Meščaninov (1945: 270) treated the category of state as a part of speech, as did Vinogradov (1947: 401). In Meščaninov's system, words of such categories as adverbs were capable of simultaneously holding membership in the category of state, depending on their use. Vinogradov's system was based on the syntactic behavior of predicative words in contrast with verbs. Galkina-Fedoruk (1952) also based her analysis of the category of state on syntactic criteria: lack of gender agreement with a subject and absence of government relationships.

The actual membership of the category of state has varied according to the definition given the category by various people, though in practice the relationship between the two has not been fully consistent. Ščerba, for example, cited "impersonality" (bezličnost') and "inveriability" (neizmenjaemost') as defining features of the category, but included (ja) rad(a) which violates both of these conditions.[5] Galkina-Fedoruk (1952) excluded all personal forms from her category of state, while Isačenko (1965: 278 - 297) included those short-form adjectives which lack corresponding long forms, but rejected forms in -o and -e of the "mne interesno" type, claiming that they are short-form adjectives. However, Isačenko added some substantives (len', pora) and other words (nečego, nekogo). Pospelov (1955) excluded short passive participles from the category of state on the grounds that they participate in the verbal categories of voice and aspect, while

5. Šapiro, A. B. (1955: 46).

Galkina-Fedoruk (1952) included them.

Šapiro (1955), in a paper which rejects the category of state, criticized most of these approaches. Both Meščaninov and Vinogradov are criticized for defining the category in such a way that it was possible for many adjectives and adverbs to hold dual membership. Šapiro prefers to allow only morphological criteria to figure in assigning words to categories, and is unimpressed with syntactic arguments put forward by any of the other linguists. However, his purism gets him into a difficulty which he is forced to dispose of arbitrarily:

> "Otkaz ot priznanija "kategorija sostojanija" kak časti reči privodit k tomu, čto količestvo slov, obyčno vključaemyx v neë ostajëtsja "besprizornym", tak kak ne možet byt' vključeno ni v odin iz suščestvujuščix morfologičeskix klassov (žal', nado, možno, nel'zja i nekotorye drugie). Èto fakt, kotoryj ostaëtsja tol'ko priznat'. Slova mogut, v svjazi s obščim xodom razvitija jazyka, vypadat' iz tex morfologičeskix klassov, v sostav kotoryx oni ranee vxodili, ne perexodja v drugie klassy, no vypolnjat' pri ètom te ili inye sintaksičeskie funkcii. Sistema vzaimootnošenij meždu častjami reči i členami predloženija ne ispytyvaet ot ètogo nikakix potrjasenij, tak kak ona pokoitsja na tex osnovanijax, tol'ko produktivnyx i živyx jazykovyx faktov i processov."[6]

The problem which underlies the debate on the category of state is one of which theory of language one is to use for analysis. The debate could run in circles forever unless this problem is addressed.

An interesting approach to the category of state which is not

6. Šapiro (1955: 54).

rooted in this fruitless debate is taken by Karin Pontoppidan-Sjövall (1968). In the belief that lexicological, morphological and syntactic considerations are inadequate in dealing with the category of state, Pontoppidan-Sjövall seeks to apply a theory of "relational forms" to the analysis.

"Causality" is taken as the basic relational form in Russian (and the other Indo-European languages with inflected verbs). The category of state results from the cancellation of "causality", resulting in a "non-causal" relational form. In the same way that an "action aspect" emerges from the relational form of "causality", so an "aspect of state" emerges from the cancelled action pattern.

This process is interpreted as a psychologically (i. e. intuitively) motivated process.

So-called "ego-functions" include the feature of solidarity with the action. In agentless constructions, the speaker does not attain the level of the ego-function, remaining at the level of the so-called "field-function". Pontoppidan-Sjövall calls these "case constructions". The agentless structure is explained further:

> "...the semantic areas for the predicatives... constitute areas of judgement that are highly subjective and as a result it is likely to be within just such areas that we can expect there to be a need to express indefiniteness as to the agent. As has been pointed out above judgments relating to oneself are placed at the very top of the psychological hierarchy, since it is here that we have the greatest number of acts of judgment bearing on ourselves. Our own personal condition and possibilities, and also our own personal experiences in the area of sensory impressions, are the subject of careful assessment. The adoption of an attitude towards a fact that has no modal points of connection must appear simpler from a

psychological viewpoint."[7]

That is, truth and falsehood are easier to determine for "I walk" than for "I must walk". Furthermore:

> "If the attitude adopted towards the element of necessity is not so final, if one, so to speak wished to shift some of the responsibility from oneself, we have the alternative expression 'it is necessary for one to walk' as in the Russian 'mne nužno poguljat''. The agent pattern has been abolished in this formulation with the result that the aspect of responsibility in the perspective of cause-effect has been pushed into the background."[8]

Applying the same analysis to sensations and experiences, Pontoppidan-Sjövall comes up with a syntactic analysis of the so-called category of state. It is concluded that in this system there is no need for such a category to account for the data.

Of the studies of the category of state examined, the one by Pontoppidan-Sjövall appears to be the most adequate. It examines essentially the same range of data as the other linguists, but goes beyond other work in more successfully linking the syntactic phenomena with some of the semantic properties of the sentences. The analysis postulates a link between the category of state and the whole phenomenon of impersonal sentences in Russian. The uncovering of this generality is a possible step toward a deeper understanding of a large segment of the structure of Russian.

Pontoppidan-Sjövall (1968) is interesting in a theoretical sense as well. The generalization which it achieves is done through the postulation of abstract (semantico-)syntactic rela-

7. Pontoppidan-Sjövall (1968: 66 - 67).
8. Ibid. p. 67.

tionships. In principle, this is not unlike the method and thrust of transformational-generative grammar. It is therefore of particular interest to us, and will be referred to again in Chapter 4.

2.2 Modality and the Verbal Category of Mood in Russian

The category of mood has long been associated with expression of modality in the work of linguists studying the structure of Russian. Typical of this connection is the following statement from Vinogradov (1947: 581):

> "Kategorija naklonenija - èto grammatičeskaja kategorija v sisteme glagola, opredeljajuščaja modal'nost' dejstvija t. e. oboznačajuščaja otnošenie dejstvija k dejstvitel'nosti, ustanavlivaemoe govorjaščim licom."

A complete review of the various treatments of verbal mood is beyond the scope of this study. Attention will be limited to a few examples of work which relates mood to logical modality or which links verbal mood and the so-called modals.

In Davydov (1854), an early grammar which treats the category of mood, there is an attempt to link the category of mood in Russian to Aristotle's modal system:

> "Kromě vidov'' i vremën'', v'' glagolě vyražaetsja posredstvom'' nakloněnija različnyj obraz'' soveršajuščagosja dějstvija, otnošenie bytija ili dějstvija k'' licu dějstvujuščemu. Nakloněnija sootvetstvujut'' logičeskoj obraznosti (modalitas) suždenij. Russkij jazyk'' iměet'' sledujuščija nakloněnija:
>
> 1) Iz''javitel'noe (jud. assertoricum) dlja pokazanija dějstvija nezavisimago i dějstvitel'no soveršajuščagosja: čitaju, pišu
> 2) Povelitel'noe (jud. apodicticum) dlja vyraženija voli neobxodimoj i nepo-

> sredstvennoj, prjamoj: čitaj, piši.
> 3) Soslagatel'noe (jud. problematicum), dlja vyraženija dějstvija prepodlagaemago i tol'ko vozmožnago: čital by, pisal by."[9]

Panfilov (1968: 70) correctly notes that this association is the result of a misunderstanding. The so-called judicum apodicticum is used in logic to judge necessary conditions in objective reality, and is expressed by a verb in the indicative mood.

Šaxmatov (1941) took a far broader view of the scope of mood and modality than Davydov did. Rather than try to use an approach which followed the limitations of formal logic, Šaxmatov tried to approach the problem of verbal mood from a "psychological" perspective:

> "Nakloneniem nazyvaetsja slovesnoe vyraženie čuvstva svjazi meždu sub''ektom i predikatom."[10]

This is the only boundary which Šaxmatov places on the category of mood. Thus, he is not restricted to the morphological forms which other scholars insisted on. Šaxmatov will admit not only word forms, but also auxiliary words, changes of intonation and word order variance.

Among the forms admitted by Šaxmatov to the category of mood are such modal words as verojatno and možet byt'. Bondarko and Bulanin (1967: 121) note that Šaxmatov does not use the term "modal'nost'". It would appear that he has subsumed modality

9. Davydov (1854: 67).
10. Šaxmatov (1941: 481).

entirely under the umbrella of his category of mood.

Isačenko (1960: 470 - 474) also turns his attention to the interconnection of the concepts of modality and mood, and links the two by adopting a "psychological" perspective on modality. A significant factor in his approach is the observation that all predications must involve a subjective element supplied by a speaker. Equating this evaluative function of the speaker with modality, Isačenko notes that predication cannot exist without modality. It follows that verb forms, which are by their nature predicative in function, are linked with modality.

Rather than produce a catalogue of various statements on mood and modality, we will leave off with these few examples which span the field from moderate (Davydov) to extreme (Isačenko) statements on the interconnection of the two categories.

2.3 Modal Words and Modal Particles in Russian

Vinogradov (1947) noted that a class of "modal words" stand outside the traditional system of parts of speech. Their separateness is determined by the fact that they do not always belong to the same part of the sentence, and their role is to express modality of the whole utterance, not merely of a part of it. These words came to be known variously as "modal words" or "vvodnye slova" (parenthetic words).

Vinogradov noted that historically the modal words had been classified as a subgroup of the adverbs - not a startling fact when it is considered that many words can serve both as adverbs proper, or be used parenthetically: verojatno, dejstvitel'no.

He also commented on a similarity in function between modal (parenthetic) words and verbal mood.

In addition to modal words, Vinogradov noted the existence of so-called "modal particles" of the type mol, de, deskat'. He claimed that there is no clear boundary between the categories of modal particles and modal words, but that they are distinguishable from other particles in that they take as their domain the whole sentence, whereas the other particles relate only to a part of the sentence.

Crockett (1971) attempts to treat modal words as a syntactic category within a transformational-generative grammar. Breaking with the pre-Vinogradov tradition, Crockett assigns modal words and adverbs/short-form adjectives to different nodes. A node "MODAL" dominates modal words, while adverbs and short-form adjectives are dominated by VP.

Crockett offers several arguments to motivate this. Firstly, a separate MODAL node is supposed to prevent misapplication of the NOMINALIZATION transformation. Secondly, the node MODAL could permit unrestricted application of the NEGATIVE transformation to VP.

These arguments are typical of the early Chomskyan syntax, in which transformational rules could perform the operations of derivational morphology (Argument #1) and in which the meaning-preserving constraint on transformations was not strictly adhered to (Argument #2). Evidence from English in Klima (1964) for negation and Chomsky (1970 (a)) for nominalization would tend to

rule out these particular arguments in the Extended Standard Theory.

Crockett cites a number of constructions in which modal words behave differently from manner adverbials. Modal words cannot be conjoined or expanded by attributive adverbials. No obvious counter-examples come to mind, but this is not proof that MODAL is not part of VP.

Crockett's argument against modal words being dominated by VP is a semantic one. She claims that English modals only mark probability, while Russian ones do not. How this fits with the conclusion that Russian modal words are not dominated by VP is not clear, nor is her assertion about the semantic content of the English modals indisputable.

2.4 Transformational-Generative Studies of the Syntax of Modals

In this section we will look at some recent work on modals in English and Russian.

By far the bulk of research on the syntax of modals within the framework of transformational-generative grammar has examined English data. The first statement on the English modals taking this approach is contained in Chomsky (1957). Later studies of the syntax of English modals include Chomsky (1965), Chomsky (1970 (b)), Newmeyer (1970), Newmeyer (1975), Ross (1969), Langendoen (1970), Palacas (1971), Jenkins (1972), Kuiper (1973) and Jackendoff (1972).

In general, these studies are of two types. One group generates the English modal directly as part of the V(erb) P(hrase)

in the base, relating it to the other auxiliaries, but distinguishing it from the main verb. The other group claims that the English modals are main verbs in a "higher predicate" (a generative semantic approach).

Work on Russian modals from a transformational-generative perspective has been much more limited. Besides the work of Crockett mentioned in section 2.3, to our knowledge only a handful of other studies exist: Chvany (1970 (a)), Chvany (1970 (b)), Chvany (1974), Babby (1975), Miller (1973) and Klima (1963).

2.4.1 The English Modals

In Chomsky's treatments of the English modals, they are generated in the base: Chomsky (1957: 39), Chomsky (1965: 43), and Chomsky (1970 (a): 16). They are generated as part of the category AUX.

In another work, Chomsky (1970 (b): 108) weighs two alternatives: whether to differentiate the various meanings of the modals at deep structure level or to leave this task to the semantic interpretive component operating at surface structure level. Chomsky favors the semantic interpretive hypothesis, calling the deep structure alternative "an otherwise unmotivated complication."[11] In the same paper Chomsky demonstrates that semantic interpretation rules acting on surface structures are necessary elsewhere in the grammar to account for some passives, and he revises his theory accordingly.

11. Chomsky (1970 (b): 109).

Of the works on English modality cited earlier, only Langendoen (1970), Jenkins (1972), Kuiper (1973) and Jackendoff (1972) take Chomsky's work as their starting-point. Newmeyer (1970; 1975), Ross (1969) and Palacas (1971) assume a generative semantic theoretical framework and methodology.

Arguing on the basis of data involving the interaction of can and negation, Langendoen (1970) maintains that can and could are generated from an abstract "abilitative" element called 'ABLE', which is also the source of the surface verb 'to be able'. The other modals are also believed to come from underlying abstract elements. This solution requires an additional theoretical apparatus not officially part of the Standard Theory. It requires that lexical insertion be allowed at various points throughout the derivation of the sentence. Chomsky (1965: 84) provided only for lexical insertion in the base.[12]

Jenkins (1972) gives evidence for the existence of a syntactic category Modal (M). He attempts to show that interpretation rules which operate on surface structures are necessary in order to account for the semantic properties of many constructions involving modals (the Chomskyan position). He then goes on to show that in sentences which implicitly contain the modal 'will', that 'will' is not present in, and deleted transformationally from, deep structure. Rather, it is claimed that the future interpretation of sentences such as:

12. It may also entail differentiation of modal meanings at the deep structure level.

(2 - 1) John does the dishes tomorrow.[13]

is supplied by the semantic interpretive component of the grammar.

Kuiper (1973) attempts to show what the lexical entry for can should look like. He assumes a lexicon of the type prescribed by Chomsky (1965) and Jackendoff (1972) containing:

1) a phonological matrix, and

2) a complex symbol consisting of:

a) a categorial feature: M in the case of modals,

b) strict subcategorization features: e. g. _____NP in the case of transitive verbs,

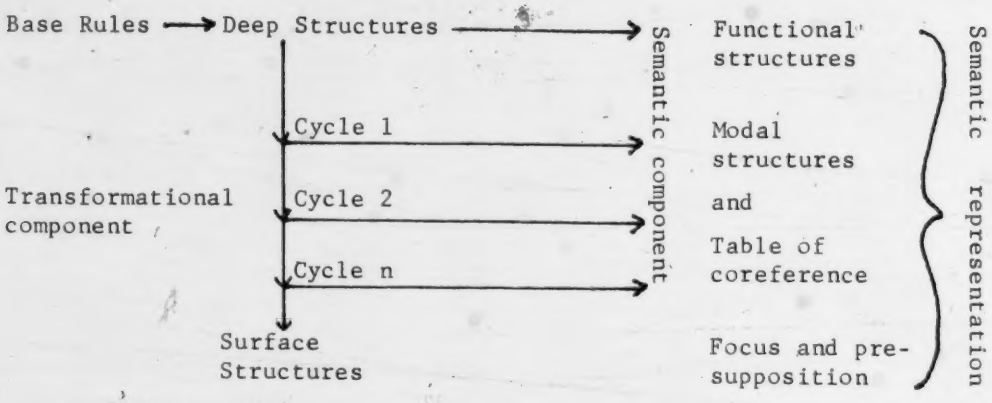
c) syntactic features: e. g. $\left[\begin{smallmatrix}+\\-\end{smallmatrix}\ \text{animate}\right]$

d) semantic features whose form is supposedly like that of the syntactic features.

In addition, Kuiper (1973) follows the convention that only positively specified strict subcategorization features, and only negatively specified syntactic features will appear in lexical entries. The other features are to be introduced by redundancy rules.

Jackendoff (1972) presents a proposal which follows Chomsky's position that the interpretive semantic component of the grammar must differentiate the various meanings of the modals. As Chomsky predicted should be the case, Jackendoff's model allows semantic interpretation rules to operate at various points in a derivation. The format of Jackendoff's system is outlined below:[14]

13. Jenkins (1972: 95).
14. Jackendoff (1972: 4).



In this model the designation "Modal structures" refers to anything in the semantics of a sentence which affects the relation of the utterance to the real world. Therefore, it includes much more than just the modal auxiliaries within its shadow. It covers the scope of negation and quantifiers, the contrast between definite and indefinite reference, and illocutionary potential or force.

In his treatment of the modal auxiliaries, Jackendoff observes that they must be differentiated in the lexicon and semantic component, but rejects the notion of differentiating them syntactically, except as a category.

The semantic interpretive component requires a rule to integrate the interpretation of the modal into the interpretation of the whole sentence. Jackendoff presents two proposals: one

for epistemic modals and one for root modals.[15] He proposes that epistemic modals be interpreted by the projection rule which handles speaker-oriented adverbs ($P_{speaker}$).[16] For root modals he proposes two projection rules: the one which he proposes elsewhere in this model to deal with subject-oriented adverbs ($P_{subject}$)[17] and a new rule for root modals which he calls P_{root}. He does not give us an explicit statement of the rules. Unfortunately, without a statement of the rules, Jackendoff's hypothesis is hard to test.

Among the non-Chomskyan proposals for English modals we have Ross (1969), Newmeyer (1970; 1975) and Palacas (1971). Ross and Newmeyer distinguish between root and epistemic modals at the deep structure level, a distinction which Chomsky and Jenkins explicitly rejected. Palacas follows Ross in deriving modals from higher predicates.

Ross (1969) proposed that root modals are derived from a

15. The terms 'epistemic modal' and 'root modal' come from Hoffmann (1966). These terms, based on the uses of the modals, have been adopted by a number of linguists. Jackendoff (1972: 100) summarizes them:

	Root	Epistemic
may	permission	possibility
can	ability	possibility
must	obligation	logical entailment
won't	refusal	future non-occurrence
should	obligation	supposition

16. Speaker-oriented adverbs are adverbs which are understood to relate to a speaker's attitude toward the event expressed in the sentence: Happily, John won the game. (Jackendoff (1972: 56)).
17. Subject-oriented adverbs are adverbs which express some additional information about the subject: Cleverly, John spilled the beans. (Jackendoff (1972: 57)).

transitive deep structure and that epistemic modals are derived from an intransitive deep structure. The root and epistemic modals are given separate lexical entries. The modals are treated as part of the category 'auxiliary' and carry the feature [+Aux] .

Newmeyer (1975) agrees with Ross that epistemic modals are derived from intransitive subject-embedding verbs in deep structure. But in another paper (1970) he proposes that root modals are not derived from transitive deep structures. He says instead that root modals may be epistemic modals with an added sense of 'causation'. He offers the following clarification:

> "I am not claiming that given any epistemic modal in any one of its senses there is necessarily a corresponding root modal with a causative interpretation. Nor am I claiming that for even one modal is this causative-noncausative pairing exceptionless. The point is that this pairing cuts across the modal system, and any adequate grammar must take account of it." [18]

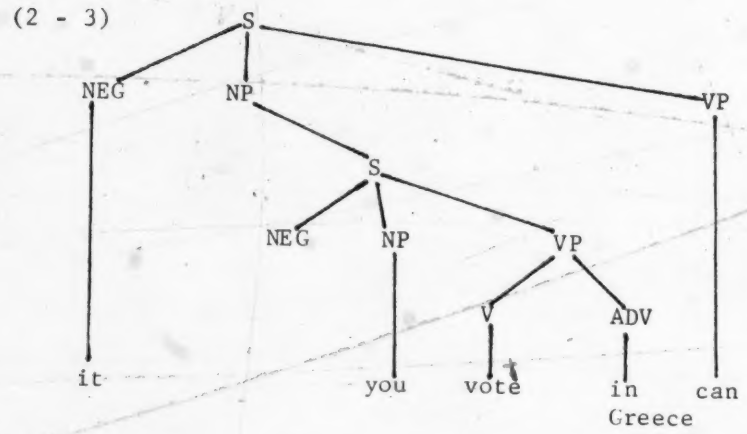
Palacas (1971) argues, as did Ross (1969), that the modals must be derived from higher predicates. He cites the behavior of modals and negation as evidence. In the sentence:

(2 - 2) You can't not vote in Greece and retain your civil liberties. (Palacas (1971: 31)).

one of the negatives negates can, the other, vote. Palacas argues that this is accounted for without any new base structures by postulating that the modal is a higher predicate (Palacas (1971: 32)):

18. Newmeyer (1970: 196).

(2 - 3)



Palacas argues that the structure of the lexicon must be revised to accommodate synonymy relations among the modals. Whereas Chomsky (1965) required the pairing in the lexicon of a single phonological item with a single set of semantic and syntactic features, Palacas (1971) argues that a lexicon which permits disjunction of forms can capture the semantic relationship between modal auxiliaries and their paraphrases.

2.4.2 The Russian Modals

Despite the claim of Roland Sussex that transformational-generative grammatical studies on the Slavic languages are second only to English,[19] the amount of available material on the Russian modals is small. Miller (1973) deals with some of the modals in his generative treatment of the "category of state". Chvany (1970 (a); 1970 (b); 1974) deals with the modals as well. Babby (1975) gives a few relevant comments in his work on Russian adjectives.

19. In Brecht and Chvany (eds.)(1974: 3).

Klima (1963) also presents some material on the Russian modals in his review of Galkina-Fedoruk (1958). All present slightly different views of the way the modals should be treated in a transformational-generative grammar, with Klima offering the only attempt to deal with them as a separate syntactic category.

Klima (1963) assigns the modal predicatives moč', dolžen, nado, nužno, nel'zja and možno[20] to a category MODAL AUXILIARY which is distinct from the Verb. His analysis rests on three pieces of evidence: the ability of the so-called modal auxiliaries to conjoin with each other, the exclusion of the modal auxiliaries from infinitival phrases, and the ability of nužno and nado to occur with by without a "past tense" (l - participial) form. His evidence will be examined in detail in Chapter 3 below.

Miller (1973), in his paper on the so-called "category of state" in Russian includes material on nado, nužno, možno, and nel'zja. He makes no mention of dolžen, though some linguists, notably Isačenko (1965) have included it in the 'category of state" or "predicative words".

Miller argues that the "category of state" words are Adjectives, a surface structure category derived from a deep structure category called "Predicator", which also gives rise to Verbs in surface structure. As adjuncts to this hypothesis, Miller proposes that, following Fillmore (1968), case be realized as preposition plus noun plus case ending, and that a process of topicalization

20. Also budet: Klima (1963: 149) Reprint (1974: 30).

is required to derive surface structure nominatives. He also postulates that nominal features (e. g. [+animate]) can determine surface structure case and surface structure configurations and that a number of surface case forms are derived from underlying locatives.

The words nado, nužno, and možno, as members of the "category of state", are assigned to the class of Predicators and given the feature [+Adjective] . However, nel'zja is not assigned a feature, though without adequate explanation why this should be the case:

> "The rules of the grammar can be formulated so that Predicators in the deep structure are assigned no feature at all or are marked [+Verb] or [+Adjective], and nel'zja can be derived from a Predicator without any feature. The advantages of this analysis are that it shows explicitly the syntactic role of nel'zja while avoiding the problem of finding a suitable niche for it in a taxonomy of surface elements."[21]

While Soviet linguists would argue that nado and nužno cannot be considered adjectives because they do not modify nouns and there is no object of which they can be considered a property, Miller argues that their relation to their infinitival phrase complements makes the category assignment correct, since, in the following sentences, it is shown that both nouns and infinitival phrases can be referred to by čto:

(2 - 4) (a) Čto vam nužno?

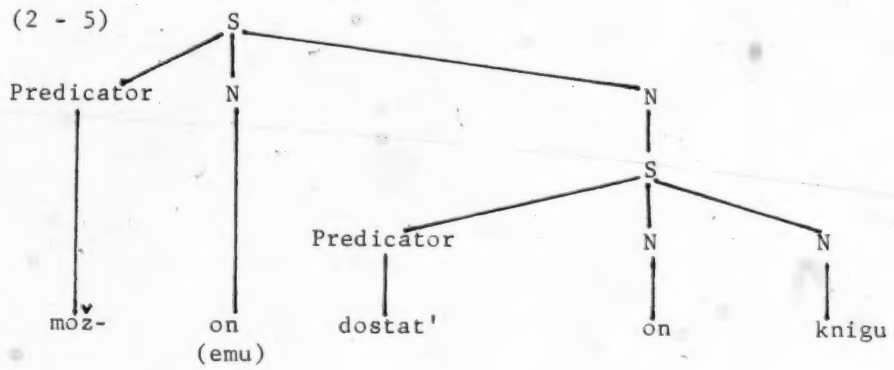
(b) Mne nužna novaja kvartira.

(c) Mne nužno kupit' pal'to.

21. Miller (1973: 351).

Miller argues that infinitival phrases are derived from sentences dominated by nouns in deep structure by a nominalizing transformation:

(2 - 5)



Structure (2 - 5) underlies the two surface structures:

(2 - 6) (Emu) možno dostat' knigu.

(2 - 7) On možet dostat' knigu.[22]

In arguing further for this position, Miller comes full circle back to where he started by saying that his solution is correct because "it enables one to say that...the words nužno, nevozmožno and neobxodimo are adjectives which modify...the infinitives."

Predicators are marked with various features. They can be marked [+Modal] or [-Modal], or [+Stative] or [+Possibility] or [+Necessity]. Redundancy rules exist. For example, a predicator marked [-Modal] will not bear the feature [+Possibility] and one marked [+Necessity] will not be marked [+Possibility]. The feature [+Possibility] is further subcategorized into:

22. Ibid. p. 357.

$[+P_1]$: indicating that something is possible because permission is granted,

$[+P_2]$: indicating that something is possible because of a person's mental or physical capacities, and

$[+P_3]$: indicating that something is possible because of favourable circumstances.

As in the case of necessity entailing possibility, we can envisage circumstances where $[+P_3]$ "favourable cirumstances" would presuppose either $[+P_1]$ "permission", or $[+P_1]$ may presuppose $[+P_3]$ or $[+P_2]$ "mental or physical capacity" may presuppose $[+P_3]$. The motivation for these features is not clear.

The circular argumentation of this analysis notwithstanding, Miller provides an interesting explanation of the interrelationship between the "impersonal" constructions involving the "category of state" and the corresponding "personal" paraphrases. Accompanying the change of the feature $[+Adj]$ to $[+Verb]$, is a shift from $[+Location]$ to $[+Agentive]$ on the noun immediately to the right of the Predicator during the topicalization transformation. This has the effect of changing the role of that noun in the sentence to one of active involvement in the situation. This is not unlike the causal and agentive functions in the work of Pontoppidan-Sjövall (1963; 1968) used to describe the same relationships.

Babby's work on the Russian adjectives includes an analysis of dolžen (Babby (1975: 101 - 102)) and moč' (mog-) which assigns dolž#n- the feature $[+Adj]$ and mog- the feature $[-Adj]$. In Babby's grammar, the long form of words marked $[+Adj(ective)]$

is supplied by transformations. If the verb in the matrix sentence, in this case dolž#n- [+Adj], does not appear at any point in the derivation of the sentence under an NP node, then it remains in the short form. Babby supplies a transformational history of dolž#n- which insures that it never appears under NP.

With respect to the status of modals as a category or feature in the grammar, Babby (1975: 102) states:

> "It seems that there is no justification for recognizing a category or feature "modal". The fact that these V's are felt to constitute a separate class can be accounted for by a characteristic or unique clustering of features, any one of which may belong to a V not felt to be a member of this class. For instance, besides taking VP complements, mog- and dolž#n- are both negatively marked for Relative Clause Reduction...but so is rad-.... "Modal" or "auxiliary" verb, like the term "long form", is a useful surface-structure term, but it does not seem to be a deep-structure category or feature."

Chvany (1970 (a)) proposed a transformational-generative treatment of a range of modal words which she divided into two groups. "Modal N", the group of modals taking nominative subjects, included stan+, mog+, dolž#n+ and bud+.[23] "Modal D", the group which take dative "subjects", included nužno, nado, možno and nel'zja. While she conceded that "Modal N" and "Modal D" constitute natural classes (where "natural class" refers to lexical items which have a common feature which distinguishes them from other items of the same category), she rejected the hypothesis that a grammar of Russian contains a syntactic category MODAL.

23. She assumes that bud+ is syntactically distinct from bud_t+, a marker of future tense.

She proposed that true verbs and predicatives be marked [+V] . True verbs would be marked [-ADJ] while short-form adjectives would be marked [+ADJ] . "Modal D" and dolžn+ are also marked [+ADJ] . This is very much like Babby (1975). "Modal N" is thus not treated as a syntactically homogeneous group.

Chvany proposed that there be two lexical entries for nužno, but later (Chvany (1974)), in an article on the lexical specification of dolžn+, she revised her opinion on the necessity for two lexical items 'nužno', and decided to abandon the feature [+ADJ] , claiming that the features [± N][± V] are sufficient to specify the major lexical categories:

Noun = $\begin{bmatrix} -V \\ +N \end{bmatrix}$

Short Adjective = $\begin{bmatrix} +V \\ +N \end{bmatrix}$

Verb = $\begin{bmatrix} +V \\ -N \end{bmatrix}$

Adverbs and other elements = $\begin{bmatrix} -V \\ -N \end{bmatrix}$

Under this revised scheme, dolžn+ bears the features [+V, +N] . Although dolžn+ is inserted under V (because of [+V]) it is not conjugated because of [+N] . Tense and other verbal categories are features of the associated copula.

We will examine the arguments of Klima, Miller, Babby and Chvany below in Chapter 3 where we focus on the problem of whether the Russian modals do or do not constitute a syntactic category of Russian grammar.

2.5 Semantics of the Modals

Several interesting semantic studies of the English modals exist: Boyd and Thorne (1969), Householder (1971) and Marino (1973). These three are of particular interest to us because they go beyond merely cataloguing meanings and uses and attempt to demonstrate an abstract structure which underlies the English modals. In this respect they are of much greater interest to us than, for example, Ehrman (1966) or Lebrun (1965).

Boyd and Thorne (1969) treat the modals as the indicators of illocutionary potential[24] of the sentence in which they occur. They note that for a sentence to have an illocutionary potential other than that of 'statement' the following features must be present: [FIRST PERSON, PRESENT TENSE, NON-PROGRESSIVE ASPECT, NON-HABITUAL ASPECT] . The sentence is divided into two sentential elements: the illocutionary potential and the 'propositional content'. Boyd and Thorne represent this with the following notation:

(2 - 8) I imp you. You go.

Here, imp is the illocutionary potential (imperative), and You go is the propositional content of the sentence. The given sentence (2 - 8) underlies both of the following:

(2 - 9) You will go. (in the imperative sense)

24. Illocutionary potential (Boyd and Thorne (1969: 59)) is the ability to acquire an illocutionary force. Illocutionary force is the kind of "performative" (Austin (1962: 6)) which is performed by an utterance. A "performative" is what a sentence "does": asserts, warns, predicts, orders, requests.

(2 - 10) I order you to go.

but does not underlie:

(2 - 11) Go!

because sentences (2 - 9) and (2 - 10) contain a definite vocative element, whereas (2 - 11) contains an indefinite vocative element.

An example from Boyd and Thorne will illustrate how this works for the modals. Take the modal 'will'. It indicates that the illocutionary potential of a sentence is that of "prediction", and is not a marker of "future" or "non-past". Thus, the sentence:

(2 - 12) He will go to London tomorrow.

is potentially:

(2 - 13) I predict: He goes/will go to London tomorrow.

Householder (1971) takes an approach not unlike Boyd and Thorne (1969). He adopts the term "phrastic", a name coined by R. M. Hare in The Language of Morals, to represent a subject and predicate juxtaposed without modality. This corresponds to Boyd and Thorne's "propositional content" of the sentence. A "speaker attitude" is associated with the phrastic. Householder identifies two types of speaker attitude: "will" and "assertion". "Will" in this terminology is a general term for "command", but includes not only imperatives, but also optatives, hortatives, unreal wishes and conditions. "Assertion" designates indicatives, including those with modals.

Householder claims that modalities are derived from secondary illocutions applied to the "assertion" speaker attitude. The

modalities in this sense include both the modal auxiliaries and a list of other expressions such as "to be able". Householder postulates two basic modalities: "possibility" and "necessity". He formalizes these ideas in the following set of rules:

(2 - 14) (a) U ⟶ S + Ill (+Q)
(b) S ⟶ S' (+Mod)
(c) S' ⟶ Snu (+Neg)
(d) Ill ⟶ Assn, Will
(e) Mod ⟶ Poss, Nec[25]

where U = utterance, S = sentence, Ill = illocutionary potential, Q = question, Snu = sentence nucleus, Mod = modality, Assn = assertion, Poss = possibility, and Nec = necessity. Though crude, this gives us a more formal account than Boyd and Thorne.

Marino (1973) offers an analysis of the semantic features of the English modals. He defines "modality" as the speaker's view of the potential involved in the predication. He postulates the following rules to deal with this:

$$\text{MOD} \longrightarrow \begin{bmatrix} *\text{tns} \\ *\text{stative} \\ \text{perfective} \\ \text{Q} \\ \text{neg} \\ \text{emphatic} \end{bmatrix}$$

$$[+\text{tns}] \longrightarrow [\pm\text{past}]$$

$$[-\text{tns}] \longrightarrow \begin{bmatrix} *\text{necessity} \\ *\text{possible} \\ *\text{execution} \end{bmatrix}$$

The symbol * indicates that feature selection is mandatory. Marino interprets [+tns] as designating the indicative mood (a real predication) and [-tns] as indicating potential mood

25. Householder (1971: 94).

(an unreal predication). The feature [necessity] is interpreted to mean "external necessity of the predication", while the feature [possible] is interpreted to mean "intrinsic possibility". The feature [execution] gives the speaker's view of the actant's capacity to execute the act within the limitations set by the features [necessity] and [possible].

The three features specify eight possible matrices which Marino ranks in a hierarchy of potentiality from 1) definite future (specified [+necessity, +possible, +execution]) through 2) imperative, 3) moral obligation, 4) advisability, 5) possibility, 6) permissibility, 7) wish to 8) implicit negation, (specified [-necessity, -possible, -execution]). He suggests that further features can be added to further differentiate the modals where necessary.

This concludes our survey of literature on modality in Russian and English. We will have occasion to refer to many of these works again below.

CHAPTER 3: THE MODALS AS A SYNTACTIC CATEGORY

As we saw in Chapter 2 above, the problem of whether the modals constitute a syntactic category was addressed directly by Klima (1963) and Chvany (1970 (a); 1974) and indirectly by Miller (1973) and Babby (1975). In this chapter we will look critically at some of the arguments for and against the syntactic category MODAL.

All of the results reviewed in Chapter 2 were from research conducted in syntactic theories differing in some respect from the so-called Extended Standard Theory. Klima (1963) assumed the model of Chomsky (1957). Miller (1973) used a theory influenced by Fillmore's case grammar (Fillmore (1968)) and generative semantics (cf. Lakoff (1971), for example). Babby (1975) and Chvany (1970 (a); 1970 (b); 1974) both follow Chomsky (1965) with modifications. In Chvany's case, this includes the proposal that certain deep structure positions be optionally permitted to be empty, and the structure-preserving constraints of Emonds (1970) (developed further in Emonds (1976)). In Babby's case, derived parts of speech are specified in terms of deep structure categories plus features, with the configuration which serves as input to the morphophonemic rules being picked up in the transformational component.

As is the case with any theory, the Extended Standard Theory is assumed in this study only provisionally, as a means of getting a handle on the data. It has been shown to be an improved tool for the analysis of English, but its status as a tool in the analysis

of Russian is barely tested. Nevertheless, when we are searching for a universally applicable theory of language, we might reasonably expect that the theory which better expresses the facts of one language might be a better general theory of language also. That is the rationale for adopting the Extended Standard Theory here.

The adoption of the Extended Standard Theory as our working theory of language affects how we will view certain arguments advanced by various people in the debate over the syntactic category MODAL. In particular, arguments based on derivational morphological transformations are rejected a priori by the Extended Standard Theory, as are "double-based" transformations.

3.1 Arguments for and against the Category MODAL

Klima (1963) offered several arguments in favour of regarding MODAL AUXILIARY as a syntactic category. His pivotal argument dealt with conjunction of modals and main verbs. He noted that the modals conjoin with each other. More precisely, what Chvany (1970 (a)) called "Modal D" and "Modal N" words conjoin within their respective classes:[1]

(3 - 1) On možet i dolžen èto sdelat'.[2]

(3 - 2) Možno i nužno èto sdelat'.

(3 - 3) *Možno i dolžen èto sdelat'.

We are told in Chvany (1970 (a): 6) that if two S's are conjoined and CONJUNCTION REDUCTION is then applied, the conjoined units will

1. Chvany (1970 (a): 1).
2. Klima (1963: 148). Reprinted in Brecht and Chvany (1974: 30).

be dominated by the same node. Therefore "Modal D" and "Modal N" are dominated by the same node in sentences (3 - 1) and (3 - 2). Is that node V? Klima cites the following sentence:[3]

(3 - 4) *On dolžen i prosit èto sdelat'.

and proposes that the failure to successfully conjoin stems from the modals and verbs being separate syntactic categories.

Chvany (1970 (a): 11) cites a number of sentences which prove Klima to be wrong about modals not conjoining with verbs:

(3 - 5) On dolžen, no ne sobiraetsja èto sdelat'.

(3 - 6) On dolžen, i slava bogu, ljubit èto sdelat'.

(3 - 7) On možet, no ne xočet èto sdelat'.

(3 - 8) Emu nužno, no ne xočetsja {èto / ètogo} sdelat'.

She also explains the failure of dolžen and prosit' to conjoin in sentence (3 - 4) in terms of a deep structure constraint in the spirit of Perlmutter (1971). The verb prosi+ requires non-identity between its subject and the subject of the complement. This condition does not obtain in sentence (3 - 4) where there is identity of the subjects blocking CONJUNCTION REDUCTION. Thus, Klima's main argument fails.

Klima presents two other arguments that modals are not verbs.

Firstly, the modal auxiliaries are excluded from infinitival complements. We cannot say *budet moč', *načinaet moč', *dolžen moč' . In contrast to this, we can form dolžen sobirat'sja, budet ljubit', načinaet xotet', možet sobirat'sja using the verbs from

3. Klima (1963: 149) Reprinted in Brecht and Chvany (1974: 30).

sentences (3 - 5), (3 - 6) and (3 - 7). This means that moč' cannot form an imperfective future tense as other verbs do.

Secondly, Klima observes that nužno and nado can occur with by without an accompanying "past tense" form:[4]

(3 - 9) { Nužno / Nado } by rešit' vopros.

(3 - 10) On dolžen by èto sdelat'.

unlike verbs, which require it. But note that moč' requires the "past tense" form with by too:

(3 - 11) On mog by rešit' vopros.

The group of words Klima calls "modal auxiliaries" thus possess properties which are not the general properties of most main verbs, despite the failure of the conjoinment argument.

However, we have also seen that they are not a unified syntactic group within themselves. "Modal N" did not conjoin with "Modal D". Moč'/smoč' does require the "past tense" form in conditional mood with by.

To this we could add another piece of disunifying evidence from Chvany (1970 (a): 3). With the exception of moč', the modals place the future tense marker after themselves in normal word order, whereas imperfective verbs normally place it before. Moč' cannot form a future tense in this way at all. In past tense, the modals, again with the exception of moč'/smoč', employ analytical tense forms, and again the tense marker is postposed:

(3 - 12) On dolžen byl èto sdelat'.

4. Klima (1963: 150). Reprinted in Brecht and Chvany (1974: 32, 33).

Klima fell short of giving an exhaustive argument for the category MODAL AUXILIARY. Though he argued the distinction between modals and main verbs, he did not argue the case that they are not part of some other syntactic category. In particular, he did not argue that they are not short-form adjectives, adverbs, or members of the category of state. Nor did he make clear whether MODAL AUXILIARY is included in a general category AUXILIARY or not.

Klima is quite right in not allowing the simple fact of morphological diversity to persuade him that the so-called modal auxiliaries are not members of a single deep structure category. These are surface structural phenomena. Even failure to conjoin, as in the case of "Modal N" and "Modal D" groups, is not, per se, proof that we are not dealing with a syntactic class.[5] Such failure could be due to a semantic constraint.

Nevertheless, in light of the above evidence, we might well doubt the motivation for a syntactic category MODAL AUXILIARY in the grammar of Russian.

Miller (1973), Babby (1975) and Chvany (1970 (a); (1970 (b); 1974) adopted a different analysis. They linked the modals to the category of short-form adjectives. In Miller (1973), short-form adjectives (and the whole category of state) are a subcategory of PREDICATOR, as are verbs. In Babby (1975) and Chvany (1970 (a); 1974) they appear under the V(erb) node.[6]

5. Chvany (1970 (a): 10).
6. Chvany (1970 (a)) has a category VERBAL which includes short-form adjectives.

Miller (1973) does not mention dolžen at all in his treatment of the so-called "category of state", although others such as Isačenko (1965) have included it. Nor does he assign nel'zja a feature, even though he cites it as a member of the category of state. Therefore, his analysis of the category of state is not fully consistent, and does not account for all the data. We wonder why možno would be assigned the feature [+Adjective] while its negative form nel'zja is not.

In Chapter 2 we rejected Miller's subcategorization of 'possibility' into three numbered types because they are not mutually exclusive, and because the motivation for them is unclear. Miller does not mention whether he would similarly subcategorize 'necessity'. One might provide a partial syntactic motivation for distinguishing between $[+P_1]$ and $[+P_2]$, $[+P_3]$ on the basis of the way negation, the modals and aspect of the infinitival complement interact in Russian.[7] However, no clear means of distinguishing $[+P_2]$ from $[+P_3]$ on structural grounds comes to mind. Therefore, a two-fold division of the 'possibility' semantic field would be better-motivated than Miller's proposal.

We believe that Miller may be on the right track in trying to derive both personal ("Modal N") and impersonal ("Modal D") sentences from the same deep structure, at least insofar as the gen-

7. Data will be presented below in section 3.3 illustrating this point. In general, negated words interact with the aspect of their infinitival complements to distinguish "permissibility" from "possibility" with a significant degree of regularity.

eration of infinitival complements is concerned. However, we do not feel that personal and impersonal sentences are fully synonymous, a fact which Miller himself tacitly acknowledges when he proposes that a shift of features occur ([+Adj] ⟶ [+Verb] and [+Location] ⟶ [+Agentive]) during the topicalization transformation which produces the personal sentences. We would therefore prefer to see separate entries in the lexicon for members of "Modal N" and "Modal D". This is required if we are to observe the meaning-preserving constraint on transformations.

We will return to the problem of whether the modals are part of the subcategory of short-form adjectives within the larger category PREDICATOR after we have looked critically at the proposals put forward by Babby and Chvany, since their views are similar to Miller's in this respect.

Babby (1975) differentiated the modals in the lexicon on the basis of their verbal/adjectival characteristics, rather than on the basis of "Modal N" vs. "Modal D". Thus, both dolžen and moč' are marked [+V], but dolžen is also marked [+Adj] while moč' is marked [-Adj] .

He suggests that the intuitive judgment that there exists a syntactic category MODAL arises only out of the fact that the modals exhibit a common set of features. However, he claims that each one of these features can be applied to verbs which are not felt to be members of the category. For example, they take VP complements and are negatively marked with respect to RELATIVE CLAUSE REDUCTION, but so is rad-:

(3 - 13) *Lektor, dolžnyj segodnja vystupit', zabolel.[8]

On the other hand, Babby himself notes that modals constitute a single exception to the general rule that byt' is followed by a long-form adjective in instrumental case in sentences such as:[9]

(3 - 14) Èto pomesalo emu byt' gotovym k ot''ezdu.

(3 - 15) *Èto pomesalo emu byt' gotov k ot''ezdu.

(3 - 16) My dolžny byt' vnimatel'ny k starym ljudjam.

(3 - 17) Èta rabota možet byt' sdelana v korotkym srok.

Babby's data only mention "Modal N". The situation is different for "Modal D":

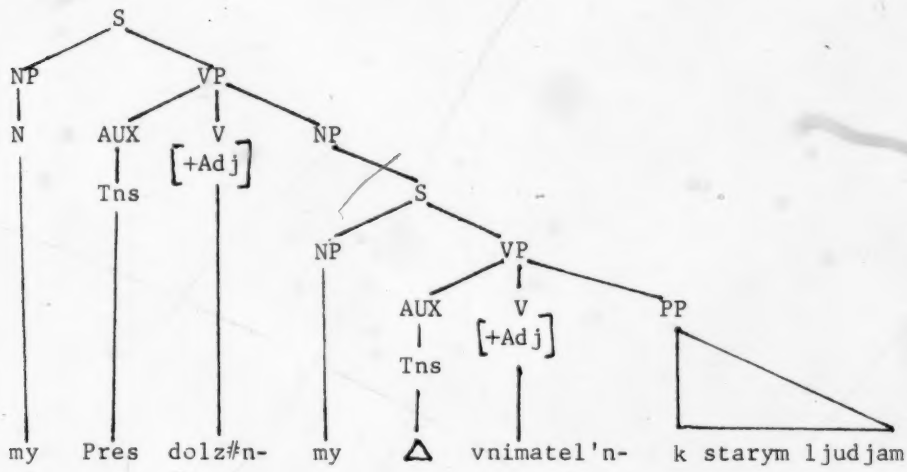
(3 - 18) Nado byt' vnimatel'nym k starym ljudjam.

(3 - 19) *Nado byt' vnimatel'ny k starym ljudjam.

Babby explains these facts by postulating that VP complements of the form $[V - S]_{VP}$ will have byt' and a short-form adjective in the surface structure, since $V_{[+Adj]}$ in deep structure will not come under NP domination. This will be the case for moč' and dolžen. Otherwise, where $V_{[+Adj]}$ comes under NP domination it is transformed into a long-form adjective in Babby's grammar. Thus, sentence (3 - 16) is assigned the following deep structure:

8. Babby (1975: 102).
9. Babby (1975: 100 - 101) acknowledges that this observation comes from Kržižkova (1968: 219), Boguslavskij (1964) and Evseeva (1964).

(3 - 20)



Thus, Babby makes a case for the one apparent exception to his observations on the modals being only a surface structural phenomenon. The argument hinges on whether our theory will permit such a derivation of long-form adjectives. This need not be an instance of handling derivational morphology through transformations, since the long-form adjective could be supplied to a suitable Phrase Marker by lexical insertion in the base. However, that is not what Babby had in mind. The long-form adjective is not part of the base in Babby's grammar.

Chvany (1970 (a): 351), breaking completely with Klima's MODAL AUXILIARY hypothesis, questions the need for any AUX node at all in Russian. Her proposal is for a category VERBAL (which she traces via Babby to Lakoff (1965)). This category includes main verbs, short-form adjectives and predicative words, all of which are marked [+V]. In rejecting AUX, Chvany opts to treat future tense as a feature, while the meaning <future> results from the

semantic interpretation of this and combinations of other features.[10]

Chvany goes a step beyond pointing out that modals conjoin with main verbs, as she did in arguing against Klima. She notes that they can also conjoin with some predicative words:

(3 - 21) On dolžen i gotov tebe pomoč'.

(3 - 22) Emu nužno, no stydno èto sdelat'.

Her argument here is the same as it was for conjunctions with main verbs: that constituents which can conjoin must be dominated somewhere by the same node.

However, as with main verbs, we do not have full syntactic identity between the modals and predicative words. Chvany herself points out that words like gotov, unlike the modals (except moč'/smoč') do not normally postpose tense (Chvany (1970 (a): 15)). Chvany's exploration of the relation of modals to other words besides main verbs partially addresses itself to that weakness of Klima's argument.

Chvany offers two other arguments respecting modals, short-form adjectives, verbs and the category VERBAL. She compares their properties of agreement with those of main verbs. Naturally, "Modal D" words, which are not inflected, are not affected here. Take the following sentences:[11]

10. For example $\begin{bmatrix} +\text{Perfect} \\ -\text{Preterite} \end{bmatrix} \longrightarrow \langle \text{future} \rangle$ for perfective,
and bud+ and a complement $\longrightarrow \langle \text{future} \rangle$ for imperfective.
(Chvany (1970 (a): 9).
11. Chvany (1970 (a): 357 - 358).

(3 - 23) (a) Ol'ga, vy bol'ny.

(b) Ol'ga, ty bol'na.

(3 - 24) (a) Ol'ga, vy rabotali.

(b) Ol'ga, ty rabotala.

(3 - 25) (a) Ol'ga, vy bol'naja.

(b) *Ol'ga, vy bol'nye.[12]

(3 - 26) (a) Ol'ga, {vy / ty} žurnalistka.

(b) *Ol'ga, vy žurnalistki.

Chvany, accepting Babby's analysis of the long-form adjective as a reduced relative clause (i. e. as derived from V dominated by NP), observes that the long-form adjective agrees with the subject in semantic gender, whereas the short-form adjective is governed by the number of the polite vy pronoun, as a verb is shown to be in sentences (3 - 24) (a) and (b). The word dolžen also exhibits this property:

(3 - 27) (a) Ol'ga, vy dolžny rabotat'.

(b) Ol'ga, ty dolžna rabotat'.

The other evidence, perhaps weaker, involves the behaviour of the modals with respect to tense. It was noted above that it is not clear whether Russian verbs have a future tense as such. Russian predicatives, including "Modal D" and dolžen, clearly have

12. Some speakers, contrary to Chvany's judgment, consider sentence (3 - 25) (b) to be well-formed, but consider the following two sentences ill-formed:
(3 - 25) (c) *Ol'ga, vy mudrye.
(d) *Ol'ga, vy umnye.
The adjective 'bol'noj' appears to be exceptional, and Chvany's argument remains generally valid.

both a past and a future tense and, unlike the case of verbs, the tense marker is postposed for "Modal D" and dolzen.[13] Since it does not attach directly to predicatives, tense requires a separate rule for them in Russian. However, mog+ does not postpose tense, except in the sense of footnote 13.

This demonstrates lack of homogeneity among the modals, but is a very weak argument if it is intended to motivate the category of VERBAL itself.

All of this evidence does not necessarily lead us to Chvany's conclusion: that since the modals share certain characteristics with verbs and predicative words, and since they can conjoin with main verbs, and since they show verbal-type agreement with polite vy, that they are all part of a single category VERBAL, and are not part of a unified syntactic category.

Their conjoining behaviour, as she herself states, is proof only that they are dominated at some point by the same node. This does not constitute proof that there is not a category MODAL within the VP (or the category PREDICATOR, or VERBAL, or whatever we choose to call it). There remain a number of problems with the proposal.

Within the category VERBAL, the feature specification [-V, +Adj] includes short-form adjectives, dolžen and "Modal D" (nado, nužno, možno and nel'zja). But short-form adjectives

13. The past tense "l" endings of main verbs could be considered postposed, but there is no word boundary between the tense marker and the verb, so the behaviour is not identical to that of the modals.

normally do not postpose their tense marker.[14] Nor do they form conditional/hypothetical mood forms with by. Nor do they generally appear with infinitival complements.[15]

The fact remains that something must be present in either the lexical specification of these words or the phrase marker to account for these differences. The same holds true for the differences between dolžen, "Modal D" and main verbs regarding the postposing of tense, and the blocking of instrumental case long-form adjectives after modals cited by Babby.

3.2 Substitution and Other Tests

Although Klima, Babby, Miller and Chvany have approached the modals in a variety of ways to determine whether they constitute a syntactic category, they appear not to have used one traditional method for determining membership in syntactic categories: can one substitute each member of the category for any other member of the category?[16]

14. Though sentences with short-form adjectives with tense postposed are not ungrammatical, we would want to avoid generating a neutral and a highly marked sentence by the same mechanism if we are aiming at explanatory adequacy.
15. The word rad, if it is a short-form adjective, is an exception to both of the latter points:
    (3 - 28) (a) On rad by èto sdelat' (Klima (1963: 150).
    (b) Ja očen' rad poznakomit'sja s vami.
    The word rad differs from the usual short-form adjective in not having a corresponding long form, and has therefore been classed with the category of state (cf. Isačenko (1965: 293).
16. This type of test was the basis of the method of Immediate Constituent analysis used prior to the advent of transformational-generative grammar. Cf. Wells (1947).

This method presents its problems for us. We have already identified a number of ways in which the series of words moč'/smoč', dolžen, nado, nužno, možno and nel'zja differ from each other. Furthermore, we have seen how these words can be linked through some aspects of their behaviour to other groups of words, particularly to other verbs, short-form adjectives, the so-called category of state, auxiliaries and even adverbs. Yet we have also seen that they exhibit a few syntactic properties which appear to set them apart. When we attempt to test the substitution behaviour of the so-called modals in relation to these other groups, we must bear in mind all of these factors in interpreting our results.

Nevertheless, though the test of substitution is not a simple key to a solution, it does provide a further test for the hypothesis that there is a syntactic category MODAL. We will proceed with the exercise of testing for substitutability for this reason, and also because none of the works on the Russian modals in a transformational-generative framework systematically examine all of the potential membership categories which were raised in the traditional literature on the Russian modals.

3.2.1 Modals in Contrast with Adverbials

The words nado, nuzno, nel'zja and možno resemble adverbs in their invariability of form. Historically they have been treated as part of the category 'adverb' as we saw in Chapter 2.

These modal words can co-occur with adverbials in infinitival constructions:

(3 - 29) (a) Oni {dolžny / mogut} skoro pereexat' pustynju.

(b) (Im) {nado / nužno / možno / nel'zja} skoro pereexat' pustynju.

However, we are prevented from substituting a modal word for the adverbial:

(3 - 30) *(Im) {možno / nado} nel'zja pereexat' pustynju.

Though such sentences are peculiar semantically, we see at once that they also violate the practice of following the modal by an infinitival complement in surface structure. If we use moč' as the infinitival complement:

(3 - 31) *(Im) nado moč' pereexat' pustynju.

we again violate the restriction that modals are excluded from surface structural infinitival phrases.

On the other hand, adverbials do not appear to participate in constructions characteristic of the modals. They do not take infinitival complements:

(3 - 32) *Oni skoro pereexat' pustynju.

Like all of the so-called modals, except moč', they lack infinitival forms, and consequently there is no question of their participation in infinitival phrases as there is for moč'.

Therefore, we may conclude that the modals do not belong to the same syntactic class as these adverbials.

3.2.2 Modals in Contrast with Short-Form Adjectives

The word dolžen resembles a short-form adjective morphologically, so we must establish whether or not it is syntactically distinct from other short-form adjectives before we can consider placing it in its own syntactic category.[17]

Characteristically, short-form adjectives do not co-occur with an infinitival complement. Dolžen in its modal meaning does:[18]

(3 - 33) Vanja dolžen vstavat' v sem' časov utra.

(3 - 34) *Vanja bolen vstavat'.

There is, however, a small group of words resembling short-form adjectives which do co-occur with infinitival complements. They include: volen, svoboden, nameren, sposoben, soglasen and sklonen.[19] These words are often included in the so-called "category of state" because of their evident "verbal" (predicative) character. We will consider this group of words when we take up the relation of the modals to the category of state below.

Normally, short-form adjectives have corresponding long-form

17. The word nužen (-na, -no, -ny) also appears to be a short-form adjective. However, it is the invariant form nužno which appears in the infinitival phrases characteristic of the syntactic behaviour of the group which concerns us here. Also, unlike dolžen, it has a corresponding long form.
18. Cf. Vanja dolžen. "Vanja is in debt, owes", which is non-modal. In this meaning dolžen does not take an infinitival complement, and is therefore more like a short-form adjective.
19. Borras and Christian (1971: 82).

adjectives of the same meaning:[20]

(3 - 35) Graždane bogatye i sčastlivye.

(3 - 36) Graždane bogaty i sčastlivy.

The modal word dolžen does not show this type of relationship to dolžnyj (= 1. due, proper; 2. indebted).[21] In its lack of a long form, modal dolžen resembles rad (-a, -o, -y). Isačenko (1965: 292) suggested that rad belongs to the group of predicative words (=category of state words) because of this exclusively predicative use. We will take up this point as well under the discussion of the modals in relation to the so-called category of state.

Because of its lack of a corresponding long-form adjective, and its occurrence with infinitival complements, we will not consider modal dolžen to be a short-form adjective.

3.2.3 Modals in Contrast with Main Verbs

The modals under consideration may differ from a number of verbs in their ability to co-occur with infinitival complements in surface structure. If that is the case, the difference may be that many of the sentences with main verbs taking infinitival complements are elliptical:

(3 - 37) (a) Ona pišet peredat' emu novosti.

20. In predicative usage, the two often differ only in respect to whether they refer to a permanent or transitory state or quality. Certain constructions such as skrytaja teplota vs. teplota skryta or kislaja kapusta vs. kapusta kisla are a special case since the phrases containing the long-form adjectives have a special referent, and therefore constitute part of a single lexical unit.
21. The meaning of dolžnyj as "necessary, obligatory" is now considered archaic.

(b) Ona pišet (dlja togo čtoby) peredat' emu novosti.

(3 - 38) Ona možet peredat' emu novosti.

But we may conclude from the awkwardness of certain sentences of this type that main verbs do not all associate with infinitival complements as easily as the modals:

(3 - 39) *On spit otdyxat' posle raboty.

There is an ordering of activities implicit in these constructions which is not apparent with the modals. There is, however, a large class of verbs in Russian which readily permit infinitival complements in surface structure. They include načinat'/načat', perestavat'/perestat', brosat'/brosit', zapreščat'/zapretit', zabyvat'/zabyt', izbegat', prodolžat' and others:[22]

(3 - 40) V prošlom godu ja brosil kurit'.

(3 - 41) Ja sovsem zabyl peredat' ej privet ot vas.

These verbs occur in structures in the same position as modals. But the modals themselves can occur in sentences containing verbs of this class plus their infinitival complements:

(3 - 42) On dolžen načinat' pisat' pis'mo žene.

(3 - 43) Nel'zja izbegat' perejti čerez Vinipeg.

However, we can form sentences as follows:

(3 - 44) Nel'zja izbegat' načinat' pisat' pis'mo žene.

(3 - 45) Ona xočet brosit' kurit'.

If modals are distinguishable syntactically from these verbs,

22. Curiously, the perfective izbežat' requires a verbal noun as its complement and cannot take an infinitive in that position. (Borras and Christian (1971: 154). The verb prodolžit' shows a similar "defective" distribution.

it must be on some other grounds.

Suppose we examine whether the so-called modals and the group of verbs which take infinitival complements participate in the verbal categories of tense, aspect, mood and voice in the same ways.

3.2.3.1 Tense and Aspect

We noted above that the modals treat tense differently from main verbs in several ways. The modals form their past tense analytically (adding byl-) with the exception of moč'/smoč', while main verbs form it synthetically (with -l, -la, -lo, -li). In the future tense, the modals postpose impersonal forms of bud- (except dolžen, which takes personal forms), unlike main verbs, which prepose personal forms of bud-. Again moč' is an exception, having no imperfective future form, though it has the perfective future smožet. There must be some difference, be it a feature or membership in a syntactic category, to account for these differences.

The speaker has the category of aspect at his or her disposal in the past and future tenses of main verbs. With the partial exception of moč'/smoč', modals are not differentiated according to aspect. The exception of moč'/smoč' is partial because of the absence of imperfective future forms in the paradigm of moč'.

3.2.3.2 Mood

Aside from the indicative mood, Russian makes use of two additional moods: conditional (hypothetical, subjunctive) and imperative. We will deal with each of them in turn.

3.2.3.2.1 Conditional/Subjunctive Mood

In the Russian conditional/subjunctive mood[23] the particle by accompanies the "past tense" of the verb.[24] A similar pattern occurs with the so-called modals:[25]

(3 - 46) Mne nado by pojti k nemu segodnja večerom.
"I ought to..."

(3 - 47) Mne nado by čitat' bol'še knig o Tolstom.
"I need to..."

(3 - 48) Vy dolžny by napisat' otcu.
"You ought to..."

(3 - 49) Vy dolžny byli by napisat' otcu ran'še.
"You ought to have..."

Note, however, that the semantic effect of adding by to the sentence:

(3 - 50) Ja pojdu k nemu segodnja večerom.

is different from its effect when by is introduced into the sentence:

(3 - 51) Mne nado pojti k nemu segodnja večerom.

In sentence (3 - 46), the by variant of sentence (3 - 51), the effect of by is to make the obligation or necessity less stringent or forceful. The conditional resulting from introducing by into

23. Strictly speaking, the term "conditional" labels one of the types of sentence in which the subjunctive mood forms occur, but in Russian, both the terms soslagatel'noe naklonenie and uslovnoe naklonenie are used. Russian "subjunctive" can occur in main clauses, and therefore differs from the "subjunctive mood" of, for example, French or Latin.
24. Except in certain contexts, where the verb is optionally omitted:
Mne by dovol'no devjati funtov. (bylo omitted)
Kto by èto tak rano? (mog omitted)
Cited in Borras and Christain (1971: 268).
25. Borras and Christian (1971: 173, 199).

sentence (3 - 50):

(3 - 52) Ja posël by k nemu segodnja večerom.

changes the sentence from a simple assertion to a statement of hypothetical obligation. If we were to postulate a scale on which we were to measure degree of obligation or necessity, the semantic shifts resulting from the two changes would be in opposite directions. Interestingly, moč' and smoč' appear to show the same characteristics as the "main verbs taking infinitival complements" in this respect.

On the other hand, the semantic behaviour of conditional contrary-to-fact sentences appears to be the same for sentences with or without the so-called modals:

(3 - 53) (a) Esli ja poslju pis'mo, to už (mne) ne nado budet zvonit'.

(b) Esli ja upadu, to už nikogda ne vstanu.

(3 - 54) (a) Esli by ja poslal pis'mo, to už (mne) ne nado bylo by zvonit'.

(b) Esli by ja upal, to už nikogda by ne vstal.

(3 - 55) Esli by ja mog poslat' pis'mo, to už (mne) ne nado bylo by zvonit'.

That is, in both cases, introduction of by causes the sentence to refer to an unreal or imagined situation.

However, one further difference between ordinary (main verb) conditionals and modal conditionals exists: the ability of the modal conditionals to express tense. Sentences (3 - 48) and (3 - 49) distinguish between past and non-past obligation. However, unambiguous designation of the future is not possible:

(3 - 56) *Vy dolžny bud__ by napisat' otcu zavtra.

With main-verb conditionals we cannot distinguish between past and non-past. For example:

(3 - 57) (a) On xotel by kupit' sebe mašinu.

(b) *On xotel bylo by kupit' sebe mašinu.

Here, sentence (3 - 57) (a) can refer to past, present or general, or future time.

While the so-called modals nado, nužno, možno and nel'zja behave like dolžen in distinguishing between past and non-past conditionals, the words moč' and smoč' behave like xotet':

(3 - 58) (a) On mog by kupit' sebe mašinu.

(b) *On mog bylo by kupit' sebe mašinu.

We have, therefore, evidence supporting the syntactic separateness of "Modal D" and dolžen from main verbs taking infinitival complements, but evidence that links moč' and smoč' to these verbs.

3.2.3.2.2 Imperative Mood

At times, the so-called modals in Russian show a semantic similarity to the imperative mood. Both are capable of expressing "obligation". Although the meaning "obligation" embraces only the so-called "strong" deontic modals nado, nuzno, nel'zja, dolžen and excludes možno, moč' and smoč', both the imperative mood and the modals cover a semantic range which includes moral compulsion, admonition and warnings:

(3 - 59) (a) Nado načinat' čitat' knigu segodnja.
"You should, are urged, are requested..."

(b) Načinat' čitat' knigu segodnja!

(c) Načinaj(te) čitat' knigu segodnja!

The similarity is particularly clear between (3 - 59) (a) and (b).[26] Consistent with the exclusion of možno from this phenomenon, the words moč' and smoč' lack an imperative morphological form: *mogi(te), *smogi(te).

Despite the semantic parallel, the so-called modals behave differently from the morphological imperative mood. They do not reflect the syntactic category of aspect, while main verbs used in the morphological imperative do. They do not reflect the features of person and number in the same way as the morphological imperative mood. The imperative mood is always marked as singular or plural (or polite), and is regarded by many as carrying a residual mark for second person. The impersonal modals nado, nužno and nel'zja can be used in a deontic sense without implying the second person. The type of obligation expressed by 'ja dolžen' has no equivalent in the morphological imperative mood. Furthermore, the so-called modals can express tense while the imperative mood cannot.

In this section we have shown that with respect to the category of mood, main verbs taking infinitival complements and the so-called modals show certain differences in their syntactic behaviour. We have, however, also uncovered evidence that the "verbal" forms moč' and smoč' differ syntactically from the other modals.

26. It is even conceivable that the latter might be derived from the former.

3.2.3.3 Voice

In Russian the category of voice, which, in general terms, shows the relationship between the agent of an action and the object of that action, has traditionally been subdivided into three subcategories: active voice, passive voice and middle reflexive voice. In sentences in active voice, the agent of the action is the grammatical subject of the sentence:

(3 - 60) Mal'čik ukral den'gi.

In sentences in passive voice, the object of the action is the grammatical subject of the sentence. The agent is in the instrumental case. The action itself is expressed either by adding -sja to the verb or by a passive participle:

(3 - 61) Den'gi kradutsja mal'čikom.

(3 - 62) Den'gi byli ukradeny mal'čikom.

Both the active and passive voice require transitive verbs. The middle reflexive voice, on the other hand, occurs in situations where the surface structure of the sentence contains no agent:

(3 - 63) Urok načinaetsja.

The members of "Modal D" have no overt agent-subject and therefore do not form passives at all, even though their infinitival complement may be transitive:

(3 - 64) Detjam nado davat' frukty.

The morphologically verbal modals moč' and smoč' do not have corresponding passive- or middle reflexive forms: *on možetsja, *on smožetsja. They are blocked because moč' and smoč' are not

transitive.[27]

In general, then, the modals appear to be governed by conditions much the same as those which govern main verbs in their behavior with respect to voice. However, if we attempt to substitute "complement verbs" (načinat', perestavat', ...) into frames which permit modals, a difference becomes apparent. In the following sentences:

(3 - 65) Dlina izmerjaetsja.

(3 - 66) Dlinu možno izmerjat'.

(3 - 67) Dlina možet izmerjat'sja.

(3 - 68) *Dlina možet izmerjat'.

(3 - 69) *Dline možno izmerjat'sja.

(3 - 70) Telo nado vzvesyvat'.

(3 - 71) Telo nužno vzvesyvat'sja.

(3 - 72) Dlina dolžna izmerjat'sja.

(3 - 73) *Dlinu dolžna izmerjat'.

we see an almost-regular pattern of co-occurrence of middle reflexives with "Modal N" and "Modal D", except in sentence (3 - 71). The "complement verbs" are completely excluded from the contexts which are characteristic of "Modal D":

(3 - 74) *Telo načinaetsja vzvesyvat'.

(3 - 75) *Telo načinaet vzvesyvat'.

though not from the contexts characteristic of "Modal N":

(3 - 76) Telo načinaet vzvesyvat'sja.

which is grammatically acceptable, if awkward.

27. We have heard the form *možetsja in the sentence *Xočetsja, no ne možetsja, but the sentence owes its humour to being ill-formed.

More interesting, however, is the apparent difference in behaviour of the various modals in sentences (3 - 66) through (3 - 73). We will comment on this again in Chapter 4.

Thus, we see that there are a number of factors which separate the so-called modals from the category of main verbs, and in particular, from those main verbs which can take infinitival complements.

3.2.4 Modals in Contrast with Auxiliaries

We raise the matter of auxiliaries largely because some linguists, notable Chomsky (1957: 1965; 1970 (a)) and Jackendoff (1972), have linked modality with this category in English. The existence of 'auxiliary' as a syntactic category in Russian is doubtful. We might possibly assign to such a category the forms of bud- associated with the imperfective future tense, the use of byl- and bud-, and occasionally est' and sut' to indicate temporal facts associated with a predicative relationship, and the use of byl- in some constructions containing passive participles.

All of the above candidates for auxiliary status could as easily be created by rules of widespread application in the grammar without ever postulating a new category. Such a solution is possible if we do not assign the modals to such a category.

To determine whether there are syntactic grounds to place the above tense markers and the modals in the same category, consider the following sentences:

(3 - 77) (a) On budet sidet' doma každyj večer.

(b) On doma večerom.

(c) On možet sidet' doma každyj večer.

(d) On budet doma večerom.

(e) *On možet doma večerom.

(f) On možet byt' doma večerom.

(g) *On budet byt' doma večerom.

(h) *On budet moč' byt' doma večerom.

(i) On byl doma večerom.

(j) *On mog doma večerom.

(k) On mog byt' doma večerom.

(l) *On mog byl doma večerom.

If we know the tense and aspect associated with the main verb and the person and gender of the subject, we can predict not only the form of byt' but also its presence or absence. We can, on this basis, predict the form of mog+ but not its presence or absence. We would be missing this important generalization in Russian grammar if we were to try to place the modals and byt' in a single category. We therefore reject the category AUXILIARY in Russian.

3.2.5 Modals in Contrast with the So-Called Category of State

In section 2.1 we examined arguments about the existence of the category of state and about what words would belong to it. The arguments examined the concept of the category of state as a syntactic class in surface structure. Miller (1973) examined the category of state as a deep structure syntactic category, and con-

cluded that it does not exist. His arguments are summarized in section 2.4.2 and commented on in section 3.1 above.

Conflicting points of view were presented on the scope of the surface structure category of state. Ščerba (1928) included both personal constructions and impersonal ones, while Galkina-Fedoruk (1952) excluded personal ones. Isačenko (1965) included some personal constructions, but only for short-form adjectives which lack corresponding long forms. He considered short forms in -o and -e (such as mne interesno, interesno, čto...) to be neuter short-form adjectives.

Vinogradov (1947) differentiated the category of state from main verbs on syntactic grounds. He noted that, like verbs, the category of state shows tense and mood, but unlike main verbs, it lacks aspect and voice. Pospelov (1955) further refined the view of whether the category of state participates in mood by pointing out that it does not have forms expressing imperative mood.

Suppose that we allow the full range of words from the above proposals to belong to a hypothetical surface structure category of state. If it turns out that each type of word in such a system behaves differently from the modals, we will have proven that the modals do not belong to the so-called category of state. We will have done so without becoming embroiled in the debate about whether to take a narrow or a broad view of the scope of the category, or even committing ourselves to its existence. We will examine the following groups of words which are considered to belong to the category of state: impersonal words in impersonal constructions,

short-form adjectives lacking long forms, and personal predicative words which take infinitival complements.

3.2.5.1 Impersonal Words in Impersonal Constructions

Galkina-Fedoruk (1958) notes two types of sentences which lack surface structure subjects:

i) Personal sentences lacking subjects:

(3 - 78) Nikogda tak ne ljubiš' blizkix, kak v to vremja, kogda riskueš' poterjat' ix.[28]

ii) Impersonal sentences:

(3 - 79) Vsegda xolodno na severe.

For the former, Klima (1963) postulates a deleted subject, using a line of argumentation resembling the early transformational and traditional rationale for a deep structural second person pronoun in imperatives. Galkina-Fedoruk and Klima suggest that the impersonal sentences have no subject at any level. Chvany (1974: 85) proposes to deal with this by altering the Phrase Structure Rules to allow generation of empty nodes in deep structure.

Sentences containing nado, nužno, nel'zja and možno look very much like the impersonal sentences. They have dative case "logical subjects" and co-occur with infinitival complements, though Klima (1963) claimed that the deep structure of the sentences containing the modals plus infinitival complements differs from the deep structures of other impersonal sentences.

We noted above that personal modals conjoin with other personal modals, and impersonal modals conjoin with other impersonal

28. Klima (1963: 151). Reprinted in Brecht and Chvany (1974: 33).

modals. Since we expect that elements which conjoin are dominated at some level by the same categorial node, the following sentences are of particular interest to us:

(3 - 80) Žarko i prekrasno na dvore.

(3 - 81) Legko i možno rešit' zadaču.

(3 - 82) *Važno i dolžen rešit' zadaču.

We note that "Modal D" words and 'impersonal words' conjoin, even if the conjunction sounds a bit awkward. As with "Modal D" and "Modal N", we see that "Modal N" does not conjoin with 'impersonal words'. Therefore we would expect "Modal D" and 'impersonal words' to be dominated at some level by the same categorial node.

However, when Klima (1963) examines the interaction of negation and direct object case for 'impersonal words' and modals, he uncovers a syntactic difference. Consider the following sentences:

(3 - 83) Nado rešit' vopros.

(3 - 84) Ne nado rešit' voprosa.

(3 - 85) Trudno rešit' vopros.

(3 - 86) Ne trudno rešit' vopros.

(3 - 87) *Ne trudno rešit' voprosa.

Sentences (3 - 83) through (3 - 87) show the behaviour of the direct object in sentences in which there appears on the surface to be resemblance. The crucial sentence in this set of data is (3 - 87), where we see that the genitive case direct object is disallowed, despite the surface structure similarity of this sentence to sentence (3 - 84). Evidently the scope of the negative particle is different. In sentence (3 - 84) it extends over the transitivity

relation, whereas in sentence (3 - 87) it only affects trudno. The deep structures of the sentences cannot, therefore, be identical.

3.2.5.2 Short-Form Adjectives Lacking Long Forms

This class of words is represented by rad (-a, -o, -y). There is an apparent syntactic similarity between rad and the so-called modals: the ability to form a conditional-type phrase without an l-form of the verb:[29]

(3 - 88) On dolžen by èto sdelat'.

(3 - 89) On rad by èto sdelat'.

When we apply the conjunction test to these words, we are again forced to conclude that they represent different deep structures:

(3 - 90) *On dolžen i rad èto sdelat'.

Further evidence of difference between the two groups of words is provided by the difference in ability of rad and dolžen to dominate a relative clause in surface structure without an intervening verb:

(3 - 91) Ja rad, čto brat poslal mne pis'mo.

(3 - 92) *Ja dolžen, čto napisal bratu pis'mo.

(3 - 93) Ja rad priznat'sja, čto brat poslal mne pis'mo.

(3 - 94) Ja dolžen priznat'sja, čto ja ne napisal pis'ma bratu.

We thus have two syntactic reasons for regarding the modals to be separate from this group of words.

29. Klima (1963: 150) Reprinted in Brecht and Chvany (1974: 33).

3.2.5.3 Personal Predicative Words Which Take Infinitival Complements

This class of words, as we noted above, is represented by volen, svoboden, gotov, nameren, sposoben, soglasen and sklonen (section 3.2).

We can construct an argument based on conjunction for these words being distinct from the modals. We are unable to say:

(3 - 95) *Ja mogu i nameren poexat' zavtra utrom.

(3 - 96) *Ja dolžen i nameren poexat' zavtra utrom.

and we infer from this that moč' and dolžen, which were shown in sentence (3 - 1) to conjoin with each other, do not belong to precisely the same syntactic class as nameren et al..

The results presented in this section indicate that the modals are different from the so-called category of state in a few respects. The genitive case direct object of sentence (3 - 84) tends to support Klima's modal auxiliary hypothesis, while the possibility of forming a sentence such as:

(3 - 97) Trudno ne rešit' voprosa.

would lead us to look for another explanation for the behaviour of trudno.

The data for conjunction of modals with all types of category of state words led us to conclude that at some level the 'impersonal words' may appear under the same categorial node as "Modal D", but we cannot make such an assertion for the short-form adjective type or the personal predicative words which take infinitival complements.

We have uncovered a few contradictions in our examination of the behaviour of the modals in relation to other categories. We will turn our attention briefly to a few other examples of their behaviour in the next section before we try to assess our results.

3.3 Further Structural Evidence

We noted above that there is a least a tendency for certain alethic and deontic modalities to be structurally (syntactically) distinguishable. Murphy (1965) and others have noted that modals interact with negation and the aspect of their infinitival complement in approximately regular ways. The combination:

ne + MODAL + Perfective Infinitive

tends to result in an alethic meaning ("impossibility"), while:

ne + MODAL + Imperfective Infinitive

tends to result in a deontic meaning ("impermissibility") or a meaning of dissuasion.

The following sentences illustrate this regularity:[30]

(3 - 97) Ja ne mogu vstavat'.
"I cannot get up (because the doctor has forbidden it)".

(3 - 98) Ja ne mogu vstat'.
"I cannot get up (because I lack the strength)".

It must be recognized that this is not an absolute regularity, and that a shift of emphasis in a sentence to some particular aspect of the action may take precedence in determining the choice of aspect in the infinitival complement. For example, in the

30. Murphy (1965: 139).

following sentences:[31]

(3 - 99) Žit' s nej ja ne mogu.

(3 - 100) Golova treščala...On poexal na stadion, no vesti zanjatija ne smog, potomu čto očen' mutilo.

(3 - 101) I času ostavat'sja tam ne mog, v ètot že den' uexal obratno v diviziju.

These are simply instances where the imperfective infinitive focuses on the continuous nature of the action or state, though the meaning is clearly alethic.

Whereas Štejnfel'dt (1963) placed all of the data in one group, Forsyth (1970) compares negative and affirmative contexts for the co-occurrence of modals with the aspect of the infinitival complement. He obtains the following results for moč'/smoč' and možno:[32]

AFFIRMATIVE SENTENCES	IMPERFECTIVE	PERFECTIVE	%PERFECTIVE
moč'/smoč'	23	40	63.5
možno	14	48	77.3
NEGATIVE SENTENCES			
ne moč'/ne smoč'	11	64	85
nel'zja	?	?	?

Nothing here is inconsistent with the traditional rules. We would

31. Forsyth (1970: 242). Sentence (3 - 99) is from Chekhov's Duel'; (3 - 100) is from Semënov's Petrovka 38; sentence (3 - 101) is from Šoloxov's Sud'ba čeloveka.
32. Štejnfel'dt (1963) presents the following per centages of perfective infinitival complements containing both affirmative and negative contexts:

možno	67.6 % perfective
moč'	67 % perfective
smoč'	88 % perfective

expect alethic meaning to be invoked more often than deontic meaning, and this is indicated by the high co-occurrence of negative modal and perfective.

3.4 Is There a Syntactic Category MODAL?

In the preceding sections we saw evidence both for and against a syntactic category MODAL.

In support of such a category we saw that the modals show a number of common characteristics. They are excluded from infinitival complements, though they all take infinitival complements themselves. When they are used in "conditional mood" with by, all except moč' and smoč' can "omit" the l-form of byt'. Furthermore, these conditional forms can express past time, again with the exception of moč' and smoč'. They exhibit a characteristic pattern of interaction with negation and aspect to produce various meanings. They are unlike verbs in their inability to be followed in surface structure by byt' and a long-form adjective in the instrumental case. They cannot be substituted in all contexts for adverbs or short-form adjectives, and participate in the various categories of main verb in various ways which set them apart. They postpose tense markers under normal conditions, unlike main verbs (except for moč' and smoč'), but moč' lacks an imperfective future form. "Modal D" and moč' lack passive forms. The "auxiliary" forms of byt' are regularly predictable, while the regularities of mog+ can only be predicted on a different basis. And finally, the string ne + MODAL + infinitive takes a genitive direct object, while ne + category of state word + infinitive takes an accusative

case direct object.

On the other hand, behaviour of the so-called modals is not uniform. "Modal D" and "Modal N" do not conjoin, and behave differently with respect to their participation in passives, for example. The various words show a variety of morphological characteristics with respect to inflection, some being verbal, some resembling short-form adjectives and some being uninflected. Moč' and smoč' do not postpose tense, as the other so-called modals do. Furthermore, the modals are able to conjoin with main verbs, some predicative words and show verbal properties of agreement with polite vy. They resemble rad in their appearance with by without an l-form of the verb.

Thus we have not found a clear answer to our question.

Some of the problems might be dealt with if we hypothesize that any differences relating to morphology would be dealt with by lexical features, and that lexical co-occurrence restrictions account for some aspects of the data such as the possible expression of past time in the conditional forms. This means of accounting for some of the data would effectively link the modals, through their lexical features, to other categories of the grammar. So we cannot consider this as an argument for setting up a syntactic category MODAL.

The surface structure string negative + MODAL + Infinitive which was linked above to alethic and deontic meanings could be differentiated by the semantic interpretive component of the grammar. Another alternative would be to postulate a transform-

ational rule whereby the MODAL, specified as deontic or alethic by a lexical feature, would govern the aspect of the infinitival complement, as follows:

S. I.	X	ne	MODAL [+deontic]	V	NP	X
	1	2	3	4		5
s. c.	1	2	3	4 [-perfective]		5

This would be a messy process because V should already be specified with respect to aspect. Furthermore, this solution would not give us the means to generate those sentences where the aspect of the infinitival complement is not predicted on the basis of the modal meaning, but by the semantic context.

Though from the standpoint of formal rigour it is attractive to try to work out a transformational rule, this does not fit with the evidence. Though the Extended Standard Theory lacks a well-defined means of specifying semantic interpretive rules[33] it appears that this is our best option in this case.

The "semantic interpretation" solution gives us no reason for postulating a syntactic category MODAL. It would, however, require that the modals carry appropriate semantic features in the lexicon to provide adequate input for the semantic interpretive rules.

If the modals are not a syntactic category by themselves, to

33. Jackendoff (1972: 69 - 82) attempts to sketch what such rules would look like, but the theory is not fully developed.

which category do they belong? Perhaps, as Chvany has suggested, each modal belongs to the subcategory of a large category VERBAL which it resembles morphologically. It is to be feared, however, in such a solution, that we could not avoid a proliferation of features to account for the multiplicity of behaviours we have encountered. For example, we would need features which would somehow link rad-, "Modal D" and dolžen on the basis of their behaviour with by, link dolžen and rad- on inflectional grounds and exclude "Modal D", link "Modal D" and dolžen on the basis of their marking of tense, while excluding rad- and moč'/smoč', and so on.

Nevertheless, this appears to be our most reasonable solution. Some of the problems of the lexical specification of the modals will be explored below in Chapter 4.

CHAPTER 4: MODALS IN THE LEXICON

In the preceding chapter we examined the syntactic behaviour of the so-called modals, and contrasted it with the behaviour of adjectives, adverbs, main verbs, auxiliaries and the so-called "category of state". We saw that, while there is evidence that the words nado, nužno, dolžen, možno, nel'zja, moč' and smoč' all differ from the enumerated categories in a number of ways, they do not all differ in the same ways. In particular, the behaviour of moč' and smoč' differs from the other mambers of the list in a variety of ways. Dolžen also tends to be anomalous.

It was noted above in section 3.3 that certain meanings expressed by the Russian modals have been linked with certain syntactic combinations in surface structure. We cited the traditional rule linking alethic and deontic modalities with combinations of the negative particle, the modal and the aspect of the infinitival complement.

We also noted that various features which cut across traditional categories may be needed to deal with the various data and suggested that the lexical entries of the various modals be the place in the grammar where these be introduced.

In this chapter we will examine what role semantic factors may contribute in the lexical entries of the modals and discuss how the lexical entries and the various surface structure data may be related.

4.1 The Potential of Formal Logic in Describing the Modals

Various linguists have linked logical modal concepts and linguistic modality in their efforts to explain modality in natural language: Davydov (1843), Panfilov (1968), Marino (1973). Typically, modern treatments have noted two types of modal meaning expressed by the "same" words. The expressions of possibility and necessity have been equated with the alethic modalities of formal logic. Social/ethical expressions of obligation and permissibility have been linked with the deontic modalities.

Marino (1973) demonstrated how English parallels logic in its expression of both alethic and deontic modalities. He showed how the English modals have both strong (necessity, obligation) and weak (possibility, permissibility) meanings. Owing to this parallelism, he was able to work out a set of binary features reflecting it (cf. supra, section 2.5).[1]

In terms of formal logic, however, we should recognize that alethic and deontic modalities, though similar in many ways, are not fully parallel in their behaviour. This is the case because, whether or not something happens (i. e. whether or not it is 'true') has, in the real world, no absolute connection with whether or not it is permissible or obligatory from a social/moral point of view.[2] Thus, for the alethic modalities we can say:

1. Three binary features define $2^3 = 8$ feature matrices, more than are strictly needed to simply distinguish the oppositions weak/strong and alethic/deontic.
2. Snyder (1971: 9).

(4 - 1) (a) If [necessary] p, then p.

(b) If p, then [possible] p.

We cannot make parallel statements for the deontic modalities:

(4 - 2) (a) If [obligatory] p, then p.

(b) If p, then [permissible] p.

Both inferences in (4 - 2) are invalid.

We can carry this one step further. Suppose that we examine the truth value of p in all its occurrences. If the truth value of p is 'truth' in every instance, we can conclude that [necessary] p is true (and, of course, that [possible] p is true, since this is included in the stronger claim).[3] We cannot make the parallel inference for a deontic system. If an event or act p always takes place, we cannot conclude that it is obligatory, or even that it is permissible in this imperfect world.

Consequently, though we can confidently say that if two statements p and q materially imply each other (the 'if...then...' relationship of truth-functional logic), then [necessary] p and [necessary] q will also materially imply each other, we are unable to make a similar claim for [obligatory] p and [obligatory] q.

Caution is further indicated in attempting to use the results of formal logic in any attempt at analysis of the modals. Though modern modal logic itself arose through efforts to eliminate the paradoxes of material implication in truth-functional logic,[4]

3. This is the case since possibility and necessity are related as follows:

[necessary] p $=_{df}$ not [possible] not p.

4. Snyder (1971: 58 - 59).

today's modal logics are not themselves free of paradox. In this area, natural languages tend to reflect the state of the world more accurately than formal languages.

Consider the paradoxes of strict implication which are found in the languages Mn, M, M' and M'' of G. H. von Wright,[5] S4 and S5 of Lewis[6] and T of Feys and Gödel. The following two formulae (or their equivalents) are theorems in all of the above logical languages:

(4 - 3) $C\bar{M}pLCpq$

(4 - 4) $CLqLCpq$

where LC designates strict implication.[7] We may interpret these theorems as follows:

1) Theorem (4 - 3): This theorem will be true regardless of the truth value of q. Thus, an impossible statement p strictly implies any statement q whatsoever.

2) Theorem (4 - 4): This theorem will be true regardless of the truth value of p. Thus, a necessary statement q is strictly implied by any statement p at all.

Russian, and presumably most other natural languages, would not get

5. M has been proven (by Sobciński) to be equivalent to the language T of Feys (and to a similar system devised by Gödel). Cf. Hughes and Cresswell (1968: 30).
6. S4 and S5 have been proven (again by Sobciński) to be equivalent (respectively) to M' and M'' of G. H. von Wright. Cf. Hughes and Cresswell (1968: 45).
7. Theorem (4 - 3) means "If not [possible] p, then ([necessary] that if p, then q)".
   Theorem (4 - 4) means "If [necessary] q, then ([necessary] that if p, then q)".

into such a tangle because it does not incorporate the set of warts associated with material implication into its structure. To a hearer not concerned with formal logic, a sentence of the type:

(4 - 5) Esli p, to q.

would mean that just in case p is true, q will also be true, and cannot be false. It does not, except to the logician or composer of puzzles, mean that if p is false, that q could still be true. Therefore, if we use a statement of the pattern "$C\bar{M}pLCpq$" in Russian, we violate the natural interpretation of the pattern in (4 - 5).

The analogous deontic interpretation is also paradoxical. If we regard 'moral implication' to be the deontic analogue of 'strict implication', then we are faced with the conclusion that if an act is not permissible (forbidden), then committing it morally obliges one to proceed to do everything, including, as Snyder points out, the attractive subset "anything one likes".[8] Similarly, 'obligation' is morally implied by anything whatsoever. Yet few Russians would be so self-serving as to accept the logic of the former, and not even one of the ascetics of ancient Rus' could accept the logic of the latter.

Clearly, we must be cautious in using the results of research into the properties of formal languages in gaining insight into natural language.

Having noted that caution is necessary, we will proceed in the

8. Snyder (1971: 192 - 194). This is labelled the "Principle of Diabolical Puritanism".

following section to examine a few semantic facts which will affect the lexical entries of the modals.

4.2 Lexical Entries of the Modals: Some Semantic Factors

Both Boyd and Thorne (1969) and Householder (1971) invoked the concept of illocutionary potential (Austin (1962)) to explain the English modals. However, Katz (1977: 178) shows us why we cannot say that the modals mark illocutionary potential. Take the sentence:

(4 - 6) It is possible that I would request you to do it.

The word which determines the logical form of the sentence is not 'request'. It is 'possible'. It asserts that the state of affairs in which a speaker performs an illocutionary act is possible. It is not, of itself, a performative speech act.

Marino (1973) proposed a system of three binary features to characterize the English modals: [± necessity, ± possible, ± execution]. This avoided the problem presented by illocution, but set up an eight-fold subdivision of the semantic field. Russian modals do not appear to fit an eight-fold division of the semantic field, at least in terms of the data in Chapter 3.

We identified a distinction between alethic and deontic modality which was reflected structurally (section 3.3) and postulated that a semantic interpretation rule must deal with this distinction. Since the rule linking aspect with negated modals does not have the power to predict all cases, we would expect the lexicon to distinguish between a deontic and an alethic meaning

for input to the semantic interpretive rule.

Furthermore, we have noted that both alethic modalities are linked through relations of the type mentioned in footnote 3 above. In other words, our semantic interpretive component would have to link the following two sentences:

(4 - 7) On dolžen prijti.

(4 - 8) On ne možet ne prijti.

This is also the case for deontic modality:

(4 - 9) [obligatory] p = not [permissible] not p.

It is equally true if we work in the opposite direction:

(4 - 10) [possible] p = not [necessary] not p.

(4 - 11) [permissible] p = not [obligatory] not p.

Therefore, we have at least two parameters of meaning which we must specify for our semantic interpretive component: alethic v. deontic, and strong (necessary, obligatory) vs. weak (possible, permissible) modalities.[9]

A feature specification as follows would give us the necessary lexical differentiations:

1) Alethic

dolžen, nado, nužno	moč'/smoč', možno
+possible +strong	+possible -strong

2) Deontic

dolžen, nado, nužno	moč'/smoč', možno
+permissible +strong	+permissible -strong

9. A syntactic solution to relating dolžen and ne možet ne would require a separate lexical entry for ne možet ne, an ad hoc horror we would prefer to avoid.

This approach has at least two advantages.

First of all, there is a stylistic difference between dolžen and ne možet ne, the latter being more emphatic (markedly non-neutral) though logically equivalent. A grammar which differentiates between strong and weak modality gives the semantic interpretive component enough information to recognize this difference, without forcing us to bury the stylistic difference in the lexicon. The proliferation of lexical entries would have to extend beyond the modals to include such rare but possible combinations as ne xočet ne, ne budet ne, ne načinaet ne. Whether the pair of negative particles are introduced in the base or transformationally is immaterial here. Even a transformation which copied the negation and added a feature [+emphasis] would require a corresponding semantic interpretive rule for the added stylistic feature.[10] This would not be affected by how the grammar deals with nel'zja -- lexically or transformationally.

Secondly, this device gives us the power to explain a phenomenon of the behaviour of conjoined modals in Russian. Apart from the condition that "personal" modals conjoin with "personal" ones, and "impersonal" modals with "impersonal"ones, there is an ordering constraint which operates. When modals are conjoined, certain sequences require more of a mental flip-flop to interpret,

10. Cf. Katz and Postal (1964: 12 - 27) The semantic interpretive component of the grammar is assigned, among other things, the work of deciding paraphrase relationships, and of marking every semantic property which plays a role in the interpretation ability of speakers.

and some are simply redundant:

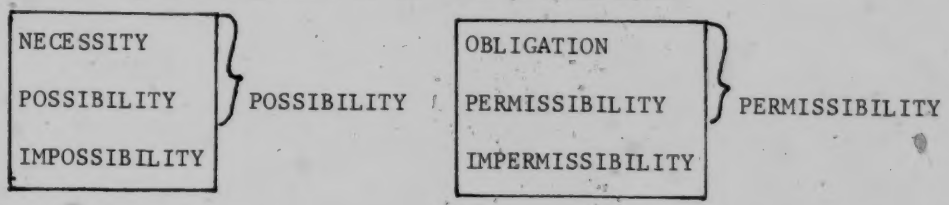
(4 - 12) Im nado i nužno iskat' novoj kvartiry.

(4 - 13) ?Im nado i možno iskat' novoj kvartiry.

(4 - 14) ?On dolžen i možet est' tri raza v den'.

We are aware of at least two conditions, possibly universal, which govern conjunction. The units to be conjoined must be dominated by the same categorial nodes (though they need not have identical fine structure -- structurally diverse adverbials can conjoin). Secondly, the units cannot have identical denotative meaning specifications from the lexicon or the conjunction will be redundant.

The peculiar sound of sentences (4 - 13) and (4 - 14) can be explained by a refinement of the latter condition. When we place the "strong" modal before the "weak" one in our conjunction, we add no new meaning: weak modalities are "included" in the strong cases. If something is necessary, it is redundant to state that it is also possible. If something is obligatory, we add no new information by stating that it is also permissible:[11]



The only non-repetitive interpretation of sentences (4 - 13) and

11. We might look for such conditions to predict the distribution of the various conjunctions: i, a, no, ili. Logicians have already pointed out to us that the process of conjunction is not always simply additive: in clauses describing actions, for example, it is also ordered temporally.

(4 - 14) is one which assigns an alethic meaning to one modal and a deontic meaning to the other.

The question of order in conjoined modals raises a question about the structure of the lexicon. In order to specify the inclusion relation in a lexical entry with binary features, we would have to assume the features to be ordered hierarchically with respect to each other. To formulate the rule we would have to adopt the convention that the "weak" modal is subordinate to the "strong" modal, or generally, that negatively specified features are subordinate to positively specified (marked) ones. The matter could be simplified by the use of unary features in the lexicon, as has been suggested by Sanders (1974):

dolžen	moč'/smoč'
[POSSIBLE, STRONG]	[POSSIBLE]
[PERMISSIBLE, STRONG]	[PERMISSIBLE]

One fundamental distinction among the so-called modals is the use of one set in personal constructions with nominative subjects, and the other set in so-called impersonal constructions with or without a dative "logical" subject. This behaviour is not peculiar to the modals. It is a feature which affects much of the system of predication in Russian, including main verbs and the so-called category of state.

One reason that subcategorization features were added to syntactic theory (Chomsky (1965)) was to allow the expression of the same feature in association with various other features without

having to restate it for a number of categories. This seems to be exactly what we need in the case of personal and impersonal sentences in Russian.

There is a current of thought that seems to run through several of the writings we examined in Chapter 2. In Miller (1973) the sentence:

(4 - 15) On ponimaet teoriju.

is derived from:

(4 - 16) Teorija emu ponjatna.

by a topicalization process which adds the feature [+Verb] to the deep structure category PREDICATOR ('ponjatno'). This suggests that he regards the personal variant as the marked one. He also derives:

(4 - 17) Mne xolodno.

from a structure with an underlying locative, resembling:

(4 - 18) 'At me' there is cold.

Pontoppidan-Sjövall (1963: 214) gives a "psychological" explanation of this type of sentence which seems to say something similar:

> "In an impersonal construction the dominance of the external world is obvious, inasmuch as a phenomenon or a course of events is described as something acting independently of an agent and, as it were, befalling a person or an object..."

Both Miller and Pontoppidan-Sjövall (1968) are grappling with the sense that in an impersonal sentence we describe being present <u>in</u> a situation, rather than creating or changing a situation.

Both Newmeyer (1970) and Pontoppidan-Sjövall (1968) make a

more explicit proposal: that transitive structures contain an element of "causation" which is not present in certain other structures. Pontoppidan-Sjövall takes the absence of this factor, "causality", to be the characteristic of the so-called category of state, identifying a kind of "aspect of state" where causal relationships are not the focus of the utterance. This is taken to be characteristic of Russian sentences which take dative "logical subjects". Thus, like Miller, Pontoppidan-Sjövall is hypothesizing that personal sentences with nominative subjects are the marked variants, marked with respect to causality.

Unlike Miller (1973) who proposed to add the feature [+Verb] by a transformation, and unlike Newmeyer (1970) who proposed different phrase markers for different modals in deep structure, we propose that the "personal" modals carry the feature [CAUSALITY] in their lexical entry, and that this feature be the general distinguishing factor between personal and impersonal constructions in Russian. We get the following lexical specifications of the modals:

dolžen	moč'/smoč'	nado, nužno	možno
[POSSIBLE, STRONG, CAUSALITY]	[POSSIBLE, CAUSALITY]	[POSSIBLE, STRONG]	[POSSIBLE]
[PERMISSIBLE, STRONG, CAUSALITY]	[PERMISSIBLE, CAUSALITY]	[PERMISSIBLE, STRONG]	[PERMISSIBLE]

The suppletive negative of možno, nel'zja, may be specified [POSSIBLE, NEGATIVE] and možno marked to block *ne možno.

If this solution is to be general for verbs, modals and the

so-called category of state, then we have reason to suppose that Chvany's category VERBAL may be the most economical way to formulate the appropriate rule for nominative and dative "subjects". The rule would look like the following:

SUBJECT CASE ASSIGNMENT:

S. I.	X	$S[N$	VERBAL	$Y]_S$	Z
			$-[$CAUSALITY$]$		
	1	2	3	4	5
s. C.	1	2	3	4	5
		$[$DATIVE$]$			

A redundancy rule insures that the nominative case appears elsewhere as the 'subject' case.

Regrettably, we have not managed to solve the problem of how to deal with the variety of data presented in Chapter 3 without the proliferation of ad hoc features which lack the explanatory attractiveness of [CAUSALITY]. In the absence of any explanatory solution, the most economical solution might be to assign a feature to the sub-groups of modals which exhibit various behaviours. For example, "Modal D" and dolžen postpose their tense marker and can distinguish past time in the conditional mood. One feature grouping them together could give us a slight economization.

CHAPTER 5: CONCLUSION

We have examined whether the so-called "modals" constitute a syntactic category in Russian and concluded that there is probably no need for such a category (Chapter 3), but that certain characteristics of the modals may best be explained by features which are part of their lexical specifications (Chapter 4). In Chapter 2 we identified certain areas where study of modality has coincided with study of other linguistic phenomena, in particular with certain uses of the verb.

Thus, linguists examining modality from the viewpoint of formal logic recognized certain parallels between various modal words and verbal mood. In particular, we can discern a similarity between the so-called strong deontic meanings of the modals and imperative mood, the former stating, the latter at least implying, obligation.

It is conceivable that this connection could be exploited in a grammar of Russian. Commands in Russian can be expressed in various ways:

(5 - 1) Zakroj(te) dver'.

(5 - 2) Zdes' ne kurit'.

(5 - 3) Ne nado kričat'.

Sentences (5 - 2) and (5 - 3) have in common an element of abruptness which the usual imperative forms lack, and that, at least in the case of sentence (5 - 2) cannot be attributed entirely to the choice of aspect. Since both sentences (5 - 2) and (5 - 3) contain

the infinitive form, it is conceivable that sentence (5 - 2) is derived from a structure containing an underlying strong deontic modal, of which the infinitive is the surface structure complement. Further research on this hypothesis would, among other things, have to consider aspect choice in the infinitive.

In Chapter 4 we looked at ordering of the modals in conjunctions and suggested that the principle in operation might be used to explain the choice of conjunction. The idea we presented on ordering the modals is similar to general rules that have been proposed to explain element ordering in Russian: given information preceding new information, or generic preceding specific. Our proposal regarding inclusion of the second element within the first being blocked is similar to the generic-specific distinction.

A number of attempts have been made to describe various semantic or lexical fields in terms of component meanings.[1] On the whole these have tended to be "static" analyses, explaining the relation of elements of language to each other outside the framework of the sentence or discourse. These relationships have been formalized in terms of binary features, unary features or components, or semantic primes, and attempts have been made to illustrate the relationships graphically.

There is a possibility that certain word-ordering phenomena in Russian could be formally described, and perhaps even explained by application of "static" semantic analysis to the processes operative in ordering the elements of the sentence or text.

1. For example, Nida (1975).

This study has not addressed itself adequately to the effects of the proposed modal lexical entries on the transformational component of the grammar. The feature [CAUSALITY] is almost certain to have consequences far beyond the behaviour of the modals themselves. In particular, future work should examine those areas of the grammar where the verbal distinction active/stative appears to play a role, such as in passives. We noted in section 3.2.3.3 that "Modal N" and "Modal D" have (at least) a tendency to behave differently with respect to the category of voice. Further research in the area of voice is likely to turn up important evidence either for or against the existence of the lexical feature [CAUSALITY].

The effect of use of unary features in the grammar should also get more attention.

In Chapter 4 we mentioned that Katz (1977) pointed out that it is wrong to regard modality as a type of illocutionary factor in a sentence. In the same work he examines imperatives in relation to their illocutionary properties, identifying a number of different uses of the imperative. If there is an underlying modal in some commands, the effect on their illocutionary properties ought to be examined.

Another interesting matter not directly part of the problem of modality in Contemporary Standard Russian is the appearance of dialect forms where words such as nado are able to assume infinitival endings (nado - t') or certain markers of person (nado - te). Both the history and the use of these forms in the dialects are worth studying.

This study has barely touched the surface of the area of modality in Russian. In addition to the possible directions of future research enumerated above, we have not looked systematically at paraphrase relationships, or how modal particles may be related to the words we have examined. In particular, any study of paraphrase relationships should address itself to words and phrases such as vozmožno, objazatel'no, byt' v sostojanii, dolžno byt', možet byt' and nužnyj. However, we believe that our proposal to recast the factor of 'causality' as a lexical feature has a certain explanatory attractiveness, and that its value is likely to be borne out by further research.

BIBLIOGRAPHY

AUSTIN, John Langshaw. How to Do Things with Words (Oxford: The Clarendon Press, 1962).

BABBY, Leonard Harvey. A Transformational Grammar of Russian Adjectives (The Hague: Mouton, 1975).

BACH, Emmon and Robert T. HARMS (Eds.). Universals in Linguistic Theory (New York: Holt, Rinehart and Winston, 1968).

BOGUSLAVSKIJ, A. "O kratkix i polnyx formax prilagatel'nogo v skazuemom" Russkij jazyk v škole 1 (1964) pp. 14 - 19.

BONDARKO, A. V. and L. L. BULANIN. Russkij glagol: Posobie dlja studentov i učitelej (Leningrad, 1967).

BORRAS, F. M. and R. F. CHRISTIAN. Russian Syntax: Aspects of Modern Russian Syntax and Vocabulary, 2nd ed. (Oxford: The Clarndon Press, 1971).

BOYD, J. and J. P. THORNE. "The Deep Grammar of Modal Verbs" Journal of Linguistics V (1) (1969) pp. 57 - 74.

BRECHT, Richard D. and Catherine V. CHVANY (Eds.). Slavic Transformational Syntax (Ann Arbor: Department of Slavic Languages and Literatures, University of Michigan, 1974).

BUSLAEV, F. I. Opyt'' istoričeskoj grammatiki russkago jazyka, (1858). Reprinted as Istoričeskaja grammatika russkogo jazyka (Moscow, 1959).

CHOMSKY, N. Syntactic Structures (The Hague: Mouton, 1957).

_____ Aspects of the Theory of Syntax (Cambridge, Mass.: MIT Press, 1965).

_____ "Remarks on Nominalization" in JACOBS and ROSENBAUM (1970). Reprinted in CHOMSKY (1972) pp. 11 - 61. Cited in this thesis as CHOMSKY (1970 (a)).

_____ "Deep Structure, Surface Structure and Semantic Interpretation" in Studies in General and Oriental Linguistics Presented to Shiro Hattori on the Occasion of His Sixtieth Birthday JAKOBSON, Roman and Shigeo KAWAMOTO (Eds.). (Tokyo: TEC Co. Ltd., 1970). Reprinted in CHOMSKY (1972) pp. 62 - 119. Cited in this thesis as CHOMSKY (1970 (b)).

_____ Studies on Semantics in Generative Grammar (The Hague: Mouton, 1972).

CHVANY, Catherine V. Deep Structures with dolžen and moč'. Unpublished PhD dissertation, Harvard University, 1970. Cited in this thesis as CHVANY (1970 (a)).

_____ "The Verbs nužno: a Transitive-Intransitive Pair" Mimeo notes from paper read at 1970 meeting of AATSEEL, New York. Cited in this thesis as CHVANY (1970 (b)).

_____ "The Grammar of Dolžen: Lexical Entries as a Function of Theory" in BRECHT and CHVANY (1974) pp. 78 - 122.

CROCKETT, Dina B. "Modal Words in Russian" The International Journal of Slavic Linguistics and Poetics XIV (1971) pp. 53 - 62.

DAVYDOV, I. I. Opyt'' obščesravnitel'noj grammatiki russkago jazyka, Izd. 3 (Sanktpeterburg, 1854).

EHRMAN, Madeline Elizabeth. The Meaning of the Modals in Present-Day American English (The Hague: Mouton, 1966).

EMONDS, Joseph E. Root and Structure-Preserving Transformations (Bloomington: Indiana University Linguistics Club, 1970, mimeo).

_____ A Transformational Approach to English Syntax: Root, Structure-Preserving, and Local Transformations (New York: Academic Press, 1976).

EVSEEVA, L. P. "Upravlenie pri imenax prilagatel'nyx v zavisimosti ot ix roli v predloženii" Russkij jazyk v škole 2 (1964) pp. 6 - 10.

FILLMORE, C. "The Case for Case" in BACH and HARMS (1968).

FODOR, Jerry J. and Jerrold J. KATZ. The Structure of Language: Readings in the Philosophy of Language (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1964).

FORSYTH, J. A Grammar of Aspect: Usage and Meaning in the Russian Verb (Cambridge at the University Press, 1970).

GALKINA - FEDORUK, E. M. "Kategorija sostojanija" in Sovremennyj russkij jazyk: Morfologija (kurs lekcij). V. V. VINOGRADOV (Ed.). (Moscow, 1952) pp. 394 - 404.

_____ Bezličnye predloženija v sovremennom russkom jazyke (Moscow: Izdatel'stvo Moskovskogo Universiteta, 1958).

HARE, Richard Mervyn. The Language of Morals (London: Oxford University Press, 1964).

HOFMANN, T. R. "Past Tense Replacement and the Modal System" in Harvard Computation Laboratory Report to the National Science Foundation on Mathematical Linguistics and Automatic Translation, Number NSF - 17 (Cambridge, Mass., 1966).

HOUSEHOLDER, Fred W. Linguistic Speculations (Cambridge University Press, 1971).

HUGHES, G. E. and M. J. CRESSWELL. An Introduction to Modal Logic (London: Methuen and Co. Ltd., 1968).

ISAČENKO, A. V. Grammatičeskij stroj russkogo jazyka v sopostavlenii s slovackim: Morfologija, čast' vtoraja (Bratislava: Izd. Slovackoj Akademii Nauk, 1960).

_____ Grammatičeskij stroj russkogo jazyka v sopostavlenii s slovackim, Morfologija I, Izd. vtoroe. (Bratislava: Izd. Slovackoj Akademii Nauk, 1965).

JACKENDOFF, Ray S. Semantic Interpretation in Generative Grammar (Cambridge, Mass.: MIT Press, 1972).

JACOBS, Roderick A. and Peter S. ROSENBAUM (Eds.). Readings in English Transformational Grammar (Waltham: Ginn - Blaisdell, 1970).

JAKOBSON, Roman and Shigeo KAWAMOTO (Eds.). Studies in General and Oriental Linguistics Presented to Shiro Hattori on the Occasion of His Sixtieth Birthday (Tokyo: TEC Co. Ltd., 1970).

JENKINS, Lyle. Modality in English Syntax (Bloomington: Indiana University Linguistics Club, 1972). Mimeo.

KATZ, Jerrold J. Propositional Structure and Illocutionary Force: A Study of the Contribution of Sentence Meaning to Speech Acts (New York: Thomas Y. Crowell Company, Inc., 1977).

KATZ, Jerrold J. and Paul M. POSTAL. An Integrated Theory of Linguistic Descriptions (Cambridge, Mass.: MIT Press, 1964).

KLIMA, Edward S. "Review of E. M. Galkina-Fedoruk (1958) Bezličnye predloženija v sovremennom russkom jazyke Moscow: Izd. Moskovskogo Universiteta" The International Journal of Slavic Linguistics and Poetics VI (1963) pp. 146 - 152. Reprinted in BRECHT and CHVANY (1974) pp. 27 - 35.

_____ "Negation in English" in FODOR and KATZ (1964).

KRŽIŽKOVA, E. "Predikativnaja funkcija prilagatel'nyx i suščestvitel'nyx i struktura predloženija" Československá Rusistika 4 (1968) pp. 210 - 219.

KUIPER, K. "Some Notes on the Lexical Entry for Can" Glossa 7.1 (1973) pp. 91 - 95.

LAKOFF, George. On the Nature of Syntactic Irregularity (Cambridge, Mass.: The Computation Laboratory of Harvard University, 1965) Mathematical Linguistics and Automatic Translation Report No. NSF - 16. Later published as Irregularity in Syntax (New York: Holt, Rinehart and Winston, 1970).

_____ "On Generative Semantics" in STEINBERG and JAKOBOVITS (1971) pp. 232 - 296.

LANGENDOEN, D. Terrence. "The 'Can't Seem To' Construction" Linguistic Inquiry I - 1 (1970), pp. 25 - 35.

LEBRUN, Yvan. Can and May in Present-Day English (Brussells: Presses universitaires de Bruxelles, 1965).

MARINO, Matthew. "A Feature Analysis of the Modal System of English" Lingua 32 (1973) pp. 309 - 323.

MEŠČANINOV, I. I. Členy predloženija i časti reči (Moscow and Leningrad, 1945).

MILLER, J. "A Generative Account of the 'Category of State' in Russian" in F. KIEFER and N. RUWET (Eds) Generative Grammar in Europe (Dordrecht, Holland: D. Reidel Publishing Company, 1973) pp. 333 - 359.

MURPHY, Arthur Burgess. Aspectival Usage in Russian (Oxford: Pergamon Press, 1965).

NEWMEYER, F. J. "The 'root modal' can it be transitive?" in Studies Presented to Robert B. Lees by His Students (Edmonton/Champaign: Linguistic Research, Inc., 1970).

_____ English Aspectual Verbs (The Hague: Mouton, 1975).

NIDA, Eugene A. Componential Analysis of Meaning: An Introduction to Semantic Structures (The Hague: Mouton, 1975).

PALACAS, Arthur L. "The Higher Predicate Status of Modals and Implications for the Lexicon" Glossa 5:1 (1971) pp. 31 - 46.

PANFILOV, V. Z. Grammar and Logic (Tr. H. A. Vladimirskij) (The Hague: Mouton, 1968).

PERLMUTTER, David M. Deep and Surface Structure Constraints in Syntax (New York: Holt, Rinehart and Winston, 1971).

PONTOPPIDAN - SJÖVALL, Karin. "Mne xočetsja - ja xoču: On the Psychological Background of Impersonal Constructions in Russian" Scando-Slavica IX (1963) pp. 208 - 216.

_____ Categories of Content and Form in Language: A Study of the Personal and Impersonal Constructions in Russian Acta Universitatis Upsaliensis, Studia Slavica Upsaliensia 5, Uppsala, 1968.

POSPELOV, N. S. "V zaščitu kategorii sostojanija" Voprosy jazykoznanija, 1955 No. 2 pp. 55 - 65.

ROSS, John R. "Auxiliaries as Main Verbs" Studies in Philosophical Linguistics W. Todd (Ed.) Series One (Great Expectations Press, 1969).

SANDERS, G. A. "The Simplex-Feature Hypothesis" Glossa 8.1 (1974) pp. 141 - 192.

SNYDER, D. Paul. Modal Logic and Its Applications (New York: Van Nostrand Reinhold Company, 1971).

STEINBERG, D. D. and L. A. JAKOBOVITS. Semantics: An Interdisciplinary Reader in Philosophy, Linguistics, Anthropology and Psychology (Cambridge University Press, 1971).

SUSSEX, Roland. "The Role of Transformational-Generative Grammar in Modern Slavonic Linguistics" in BRECHT and CHVANY (1974) pp. 3 - 20.

ŠAPIRO, A. B. "Est' li v russkom jazyke kategorija sostojanija kak čast' reči?" Voprosy jazykoznanija 1955 No. 2 pp. 42 - 54.

ŠAXMATOV, A. A. Sintaksis russkogo jazyka (Leningrad, 1941). Reprinted (The Hague: Mouton, 1963).

ŠČERBA, L. V. "O častjax reči v russkom jazyke" Russkaja reč', Novaja Serija II, Leningrad, 1928. Reprinted in ŠČERBA, L. V. Izbrannye raboty po russkomu jazyku (Moscow, 1957) pp. 63 - 84.

ŠTEJNFEL'DT, E. A. Častotnyj slovar' sovremennogo russkogo literaturnogo jazyka: 2500 naibolee upotrebitel'nyx slov (Tallin, 1963).

VINOGRADOV, V. V. Russkij jazyk: grammatičeskoe učenie o slove (Moscow: Gos. učeb.-pedagog. izd-vo., 1947)

VOSTOKOV, A. X. Sokraščennaja russkaja grammatika, Izd. 2, 1848.

WELLS, Rulon. "Immediate Constituents" Language 23 (1947) pp. 81 - 117.